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THE INFLUENCE OF HEREDITY IN THE PREVENTION OF DISEASE.

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I HAVE ventured to call attention to this most important, but most difficult and indefinite subject, not with the hope of making any original additions to our knowledge of it, but simply to question how we are to interpret some of the facts already known and to provoke a general discussion of the subject in the light of wider and riper experience. We so often hear and read of the influence of heredity in the production and propagation of disease, and the subject in its concrete form is so frequently thrust upon us in our professional experience, that we are, I think, in no small danger of neglecting and almost forgetting the other and larger form of its action, and of regarding it as an almost malevolent rather than as a grandly beneficent influence. It is too often true, from the pathologist's as well as from the historian's point of view, that "the evil that men do lives after them, the good is oft interred with their bones." A few painful instances of inherited taint or predisposition are allowed to subtend a larger angle in our mind's eye than a silent host of cases of equally truly inherited immunity, or vigor that defies attack. Our most deeply rooted and fundamental characteristics have come down to us through a long, illustrious line of mammalian and pre-mammalian descent, by a rigorous selection and perpetuation of the useful and healthful results of heredity, and are not to be smothered or perverted by the upstart legacies of an odd generation or two of morbid action. The pedigree of the most aristocratic of diseases is but of mushroom length. The inheritance of abnormality of structure is rigidly self-limited, partly by the disadvantages at which it places its possessors and partly by the strong tendency of the system to revert to earlier and more vigorous and serviceable types. This tendency of our oldest ancestral traits to assert their supremacy we term the *vis medicatrix nature*—that sleeping lion to rouse which into action all our drugs and remedies are but as feeble stings and javelins. Heredity is not only vigorously limited in its influence for evil, but is the very basis of all remedial

action. And, when we come to examine it closely, its evil influence is almost purely of a negative character—an absence of vigor, not the presence of a virus. Inherited deficiency suffers and cries out loudly for relief. Inherited vigor can take care of itself, and is silent with the great, calm silence of Nature. Are we not in danger of allowing our view of the question to be unconsciously influenced by this state of affairs even to the extent of regarding and speaking of disease as an independent entity with boundless powers of self-propagation and extension? We gloomily talk about disease being on the increase. We vehemently urge our legislators to prevent the marriage of consumptives, to restrain inebriates from propagating their kind, to forbid the bans of all whose pedigree shows the taint of insanity, as if the whole race were threatened with physical degeneracy, unless something be done to take the case out of the incompetent hands of Nature. We write of the consumptive, the neurasthenic, the epileptic, as a much-to-be-dreaded source of lasting danger to the community and to future generations, instead of as one whom Nature has branded with her verdict, "Weighed and found wanting" and marked for destruction. We seem almost to forget that even when the unfortunate sufferer escapes an immediate or directly fatal termination and succeeds in maintaining an existence for two-thirds or three-fourths of the natural term, of all his vital functions the reproductive suffers first and most severely, as is shown in the well-known infertility of wild animals in captivity, the suppression of menstruation in consumptive females, and the deadly abortifacient effect upon both sperm and germ of the syphilitic virus. When the vigor of the organism is sufficient to resist the tendency and to accomplish reproduction, a certain proportion of the offspring will revert to the healthier, sturdier type of their ancestors, while the major part of the remainder will be so handicapped by the lack of that vigor and resisting-power which their enfeebled progenitor could not impart to them, as either to perish during infancy or to break down under the strain of that grand rallying of all the vital forces for the act of procreation which marks the period of adolescence. Is not inherited syphilis, with its enormously increased mortality from the third month of fetal existence on, an example of the former method of elimination, and the tuberculous tendency, with its harvest-time just before or early in the reproductive

period, of the latter method? I think we are prone to underestimate the perfection of this check in the case of specific disease. The vast majority of ova impregnated during the period of active syphilization in either parent are destroyed before parturition, while of children produced, the few who, scarred and shattered, survive infancy seem every year to present a rapidly decreasing line toward extinction; in fact, in my own limited personal and hospital experience of some three hundred cases of hereditary syphilis, I do not believe that I have ever met with a case that had passed the age of thirty-five which presented the characteristic facial, ocular, and dental changes. Broadly speaking, all disease is self-limited, either in the individual or in the family.

In order to arrive at some practical estimate of the actual connection between heredity and disease as we find it already existing, I have endeavored to collect some statistics bearing upon the history in respect of the three great maladies to which the term "hereditary" is generally though somewhat loosely applied, and by which the welfare of posterity is supposed to be most seriously threatened, viz., insanity, tuberculosis, and carcinoma.

In regard to the first of these, it need hardly be said that it is an open question if we have any right or reason for regarding it as a disease or distinct pathologic entity in any strict sense of the term, any more than lameness, blindness, or general debility; yet as it is generally most vehemently denounced as such and declared to be the one dark shadow on the future of our civilization, I shall make no further apology for so treating it. Through the kindness of my friend, Dr. G. W. Hill, of the State Asylum at Independence, I have succeeded in obtaining reports of some fifty public institutions for the care of the insane in all parts of the United States, with an aggregate of over 54,000 inmates. Of this number, 5093 cases, or barely 9.4 per cent., are recorded as "hereditary," or in other words as having had one or more insane relations. Of course, this figure can only be taken as a very rough estimate of the condition of affairs, on account of the difficulty of obtaining accurate or reliable histories of the cases previously to their entering the asylum; indeed, some superintendents refuse to classify their cases according to cause, while a few even omit heredity entirely from their list of causes. Although in some cases, for instance, in comparatively recent immigrants, almost no family history can be elicited, while in others the patient's relations will from family pride even endeavor to conceal the existence of other "skeletons in the cupboard" among their mutual kindred, yet in many instances no such motive exists, the family being ready to tell all that they know and even more for the sake of getting

someone to take charge of the unruly sufferer. On the other hand, the existence of a lunatic or "queer body" in any family is a decidedly macroscopic symptom to the eye of the dullest observer. Like murder, insanity "will out;" and when we consider that many of these cases have been duly and elaborately examined and passed upon by a public commission that could call as many witnesses as it might desire, I think we may fairly claim that this record represents at least the major proportion of all cases in which such a coincidence existed. Even supposing that mental unsoundness in the family was discovered in only half the cases in which it actually existed, we should still be distinctly below the 22.6 per cent. which represents the proportion of cases in which heredity is recorded as a factor in the total aggregate of the English and Welsh asylums. This fact, together with the strikingly excessive proportion of patients of foreign birth in our institutions, would seem to me to go far to prove that the much-lamented increase of insanity in this age and country is in no sense attributable either to heredity or to the cumulative effect of civilization upon successive generations, but is principally due simply to the sudden and excessive changes of physical, social, and political environment to which our immigrant, and to a lesser degree our native, population has been subjected. Statistics upon this subject are scarce and difficult to obtain, and what few I have been able to collect seem rather to shake one's confidence in the popular belief that "figures won't lie" than to give any reliable and consistent information, the reports before mentioned varying from as low as 0.6 per cent. to 35 per cent. of hereditary influence. Maudsley found hereditary predisposition in 16 of 50 cases; Trelat in 43 of 73; a report to the French government in 1861 gives 530 of 2000 cases; Jacobi reports 24 of 220; Hagen discovered "direct hereditary predisposition" in 26 of 187 cases, and Mitchell in 20 of 64—a total of 659 in 2594, or a trifle over 25 per cent., apparently attributable to hereditary influence. Estimates are somewhat more numerous, but vary almost as widely: Burrows regards hereditary predisposition as the cause of six-sevenths of all cases; Moreau, of Tours, of nine-tenths; Martini of nearly one-third; Esquirol of one-fourth in the poor, of three-fifths in the rich; Bergmann of one-third; Emmert of 75 per cent.; Maudsley of "more than a fourth but less than a half;" Marcé of nine-tenths; Leidesdorf of 25 per cent.; Hill of one-fourth—making an average estimate of 52 per cent. of hereditary influence.

With all due respect to the authorities quoted, I am afraid one can hardly help being struck with the fact that the majority of the "estimates" begin almost where the "figures" leave off, and continue

onward and upward to perilously near the pinnacle of 100 per cent., and that data showing 25 per cent. are hardly a sufficiently solid basis for computations reaching over 50 per cent., even though quoted as such. Would it not seem highly probable, upon even this meager showing, that our generally accepted conception of the mischievous influence of heredity in this important field is in need of serious revision? The wider the range of investigation is made and the more completely local or personal sources of error are eliminated, the smaller becomes the apparent importance of heredity as a factor, while the common estimate of over 50 per cent. of malevolent influence seems to be supported by data to the extent of barely 10 per cent.

Of course, it goes without saying that these figures by no means represent the total number of cases in which suspicious or morbid family history existed, for there must have been many others in which, from various causes, it was impossible to elicit it; but, on the other hand, it must be remembered that the terms "hereditary predisposition" and "family influence" are very loosely used and in many cases really mean nothing more than that one or more of the patient's numerous relatives or ancestors has been insane, or even epileptic or inebriate, a fact which may have no connection whatever with the case in question, excepting an historic one. If every family in which a case of mental aberration can be ferreted out is to be regarded as predisposed, how many of us will escape suspicion? The mere fact that one of the patient's relations or even ancestors has been insane is no more necessarily the cause of his insanity than would the fact of his grandfather having been lost at sea be the cause of his meeting death by drowning. *Post hoc* is by no means always *propter hoc*, although I think that we are often apt to regard it so in hereditary pathology.

When we come to consider carcinoma, the second great morbid process in which heredity is declared to be a factor, its apparent influence shrinks to still narrower limits. Hardly any two estimates agree, not even those given at different times by the same authority, but their range of variation is much less striking than in the case of insanity. Definite data of any kind seem even scarcer and more difficult of discovery, a tolerably extensive review of the literature of the subject in the Library of the Surgeon-General resulting only in the mere handful which I have to present. S. W. Gross finds hereditary influence in 10.3 per cent. of his cases; Lebert traces it in 10 of 102; Paget traced the disease to other members of the family in 78 of 322 cases, and in another series of 160 cases found hereditary tendency in 26; Sibley finds 34 instances of heredity

in a collection of 305; West, 8 of 49 cases of uterine carcinoma, and Von Winiwarter 5.8 per cent. in his list of cases of mammary carcinoma; Velpeau finds an inherited predisposition in one-third of his cases, while Parker found such family history in only 56 of 397 cases. I have succeeded in getting a report of only one of the hospitals devoted specially to the treatment of this disease, the Brompton Cancer Hospital of London, which gives the proportion of cases having relations who are affected with carcinoma as 10.3 per cent. in their grand total of 28,638 patients in thirty-seven years.

A highly suggestive bit of collateral evidence in the same direction is the fact given by Brannan in his most interesting analysis of 2000 consecutive deaths in the experience of the Washington Life Insurance Company, that of the 56 cases having carcinoma in their family history (41 of whom had lost a parent by this disease), only one, or 1.79 per cent., died of carcinoma, while of the remaining 1944 having no such history, 67, or 3.45 per cent., fell victims to it. This unexpected preponderance of mortality, of course, is probably accidental and due to the small number of predisposed cases; but it certainly would not have been thus were heredity a really appreciable and active factor in the disease.

The evidence is scanty, but tolerably harmonious so far as it goes, and I think it would be safe to say that the tendency of the best thought of modern authorities on this subject is decidedly in the direction of seriously doubting whether heredity plays any appreciable part as a factor in the production of carcinoma. Indeed, one can hardly help wondering how such a widespread belief in the importance of hereditary influence in carcinoma came to be built up on such an apparently slender basis, especially when we remember that the figures given probably represent nearly the full proportion of cases in which a suspicious history actually existed. Here there is comparatively little tendency to concealment or falsification, on the part either of the patient or of her relatives; on the contrary, we will be told at the outset of our inquiries, with what seems almost like a morbid pride, that "there is cancer in the family." Indeed, I am half inclined to believe that we have unconsciously imbibed the major part of our belief on this subject from the laity. Merely upon *a priori* grounds one would hardly expect the organism or any part of it to be born old, and yet senility of tissue from extinction of function would seem unquestionably by far the most potent, if not the only proved predisposing cause of the carcinomatous process. The uterus undergoing involution, the atrophying mamma, the puckered lip wrinkling over the toothless gum, have all either temporarily or permanently outlived their usefulness, become supernumeraries,

pensioners on the body at large, and these are the breeding-grounds of 70 per cent. of all cases of carcinoma.

When we attempt to approach the "white plague of the North" from this standpoint, the problem becomes a well-nigh hopelessly speculative one, on account of the vastness of the field and the utter inadequacy of definite information obtainable. Estimates are legion, but figures are few, and so nearly equally distributed, from 10 per cent. to 70 per cent. in single series, as to fail to inspire much confidence in their reliability. I have written to the medical directors of some four or five of our leading life insurance companies, asking for references to data bearing upon the question. Their replies have been most prompt and courteous, but all practically to the same effect: collections of cases are so few and on so microscopic a scale that, as one of them frankly says, "We have almost ceased to regard statistics as of practical value in the selection of life risks." Text-books and monographs on pulmonary tuberculosis usually carefully avoid statistical statements, and when the rule is relaxed it is principally to ring the changes on the fossil figures of Louis, Lebert, Barthez, *et al.* My researches have been far from exhaustive, but the results have been most disproportionately and distressingly meager. And yet, so far as they go, and biased as many of them evidently are, they fall far short of supporting the commonly accepted view of the question. There is probably no disease that both the profession and the laity are more confidently and unanimously agreed in ascribing largely to hereditary influence than "consumption." Our poor starveling, flat-chested patient assures us that she knows there can't be anything "wrong with her lungs," because "there is no consumption in the family." Of six intelligent and experienced practitioners, taken at random, approached on this subject, four gave it as their opinion that from 70 per cent. to 90 per cent. of all of their cases were traceable chiefly to heredity, while the other two placed the proportion at 40 per cent. But before giving the actual figures obtained, it may perhaps be as well to briefly consider their probable value on general principles. In the first place, they are likely to be fairly exhaustive and complete as far as they go. The patients are usually under observation for considerable periods of time; are not only not in any way incapacitated by their condition for either remembering or relating the facts of their history, but are above the average in intelligence and conscientiousness. "The good die young," usually of pulmonary tuberculosis, and it is almost a question whether we are not entitled to regard conscientiousness as one of the leading morbid symptoms, so well-nigh invariably is it found in conjunction with pulmonary tuberculosis. There is but

little motive for concealment, so that the percentages probably represent almost the total of those having such flaws in their family history in each group investigated. On the other hand, in no group of morbid histories is it more imperative ever to keep in mind that *post hoc* is by no manner of means *propter hoc*. A very brief mathematical statement of the case will illustrate this at once. According to our mortality-rates one-seventh of our population ultimately dies of pulmonary tuberculosis, *ergo* any individual who could recall the histories of seven deceased ancestors or relatives would have the right, if we may use the expression, by the law of averages, to one ancestor dead of pulmonary tuberculosis, without being under any peculiar suspicion of "consumptive taint." The smallest possible family group must consist of six members, two parents and four grandparents, but when the investigation is extended, as it frequently is, to brothers and sisters, uncles and aunts, it may include from ten to thirty members, among whom it would be strange if one or more had not fallen victims to this commonest cause of death. What wonder, then, if the enthusiast upon heredity—and most of those who prepare tables are enthusiasts—is able by perfectly legitimate means to make a most imposing display of facts that apparently support his theories to the letter. But what most seriously impairs the scientific value of these tables is the fact that in a considerable minority, if not in a majority of them, the fundamental term itself denotes not merely a morbid process, but the degree of that process—in other words, that "consumption" means not merely "tuberculous degeneration," but tuberculous degeneration sufficiently extensive to seriously threaten life, or even in the usage of some authorities "tuberculous degeneration ending in death." It is by no means uncommon to hear or read such expressions as: "Mr. A. was threatened with consumption in his early days," or "Mr. B. had all the symptoms of phthisis at one time," "*but he recovered.*" I think we are inclined to markedly underestimate the prevalence, and if I might use the expression, the naturalness of this simple reversion to the ameoboid state on the part of certain of our tissue-cells. Now that Von Ruck, Trudeau, and other modern therapists, are assuring us that from 60 per cent. to 80 per cent. of cases of pulmonary tuberculosis in the earlier stages are curable, and that pathologists are informing us that over 30 per cent. of bodies dead of diseases other than tuberculosis have fibrous or calcareous deposits, evidently of tuberculous origin, in the lungs, the prevalence of even that aggravated stage of the process which is termed consumption would appear to be much greater than is usually believed. A mortality of 40 per cent.—a maximum one—would give it a morbidity of nearly 35 per cent.—indeed some authorities

claim 50 per cent. of the race as suffering from it at some time in their lives. When the process appears where we might expect it—in those areas in which cell-proliferation is most active and the tissues most nearly in their embryonic or ancestral condition, the corpuscle-breeding areas of the lymphatic glands—we dub it "struma," and place it in a separate column; when it originates in the next most active cell producing areas—the great serous membranes—we call it meningitis, peritonitis, or pleurisy, as the case may be; in the cells of the bone-marrow "osteitis," but taking all these altogether as mere modifications of the same process, it really seems that it would be well-nigh as logical to speak of "hereditary" gastritis, eczema, or coryza, as of hereditary tuberculosis. So enormous is the extent of its prevalence that it seems almost entitled to rank as one of the primary fundamental reactions of living tissue—the starvation reflex.

Of the data attainable, the oldest are those of Louis, Gialussi, Rilliet, Barthez, and Lebert, who report respectively 11 per cent., 10 per cent., 14 per cent., and 16 per cent. of all their cases (actual number not given) as presenting this factor. Piorny, Ancell, Pidoux, and Walshe go a little higher, and find heredity present in 25 per cent. of all their cases. The average keeps rising. Hérard and Cornil give 38 per cent., Briquet 40 per cent., Miller, Cotton, and Bodendahler 50 per cent., Homan 70 per cent., Portal 75 per cent., while Ruzf caps the climax with 83 per cent.

The tables in which the actual numbers are given do not vary over quite so wide a range, but there is still plenty of the "spice of life" in them. Koranyi, in 900 cases, finds heredity in 20 per cent.; Leudet, in 500 cases, in 50 per cent.; Carl von Ruck, 35.4 per cent. in 301 cases; Herman Brehmer 36 per cent. in 13,000 cases (Görbersdorf Institute); Detweiler, of Falkenstein, 35 per cent. in over 6000 cases; Brannan, 23 per cent. in 350 cases; Smith, 70 per cent. in 1000 cases. In round numbers this makes a total of 22,000 cases, with an average percentage of 37 per cent. This is a very considerable proportion, yet when we contrast it with the result arrived at by Brannan—that, of 2000 risks accepted by the Washington Life Insurance Company, at an average age of thirty-five years, 22.4 per cent. had hereditary tendency to consumption (a percentage which would certainly be greatly increased if the rejected risks, earlier ages, and both sexes were included), it seems to me far from conclusive, and certainly fails to support the usually accepted views on the question. There is, of course, no doubt that the existence of a severe or fatal degree of tuberculosis in a parent distinctly increases the probability of such a process appearing in the offspring. In Brannan's table, 27 per cent.

of those showing "hereditary tendency" died of tuberculosis, as against 16 per cent. of those showing no such tendency. But it would seem more probable that what the offspring inherit is merely the lowered vitality of which tuberculosis is a symptom, rather than any specific tendency to this special form of degeneration. The "consumptive" is physiologically below par, from his undersized heart and dilated stomach to his clubbed finger-tips.

Defective nutrition is a more powerful factor than heredity, as shown by Brannan's tables, for, of the 690 cases, with no hereditary tendency whatever, that were below the standard weight, 30.7 per cent. died of tuberculosis, as against 27 per cent. of 252 cases of all weights having such hereditary tendency; while, more significant still, of those having such tendency who were above the standard weight, only 6 per cent. died of tuberculosis, as against no less than 48 per cent. of those of this group who were below standard weight. In other words, a mere increase of fifteen pounds in weight seems capable of annulling the strongest hereditary tendency, for the 6 per cent. mortality of the heavy-weights among the predisposed is within a fraction of the percentage in the same class of the non-predisposed.

To sum up roughly, we find a tainted pedigree—

Among 57,000 cases of insanity,		in 10.1 per cent.
" 30,000 " carcinoma,		" 10.5 "
" 22,000 " tuberculosis,		" 37.3 "

These estimates are, of course, made on far too narrow a basis to be regarded as in any way conclusive, and their reliability for positive purposes is open to serious question in many particulars, but I think they at least justify us in demanding, in answer to the charge that heredity is, in any sense, a prominent or active factor in the production of disease, the Scotch verdict of "Not proven."

On the other hand, all the remedial power of Nature, individual and racial, all the vigor that defies attack, all the priceless immunity from disease, all the exquisite harmony with environment that surrounds us on every hand, are the direct results and illustrations of the law of heredity. Its beneficent effects are innumerable and unquestionable; its injurious effects few and doubtful.

Rheumatoid Arthritis.—BLAKE (*Provincial Medical Journal*, 1892, xi, 121, p. 11) expresses the view that a proportion of cases of rheumatoid arthritis are dependent upon some form of intoxication, in consequence of which the nervous system suffers secondarily. He therefore recommends that in a given case a careful search should be made for a source of poisoning from within or without. This found and removed, the circulation is to be supported, mental strain relieved, and nutrition maintained. Passive motion and massage, conjoined with electricity, should be energetically employed.

A CASE OF BILATERAL EMBOLISM OF THE MIDDLE CEREBRAL ARTERY.¹

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THE patient is S. M., an Englishman, thirty-six years of age. There is no history of any cardiac trouble, rheumatism, or syphilis in himself or his family. He smokes to excess, drinks but little, and is by occupation a peddler, and obliged to be out in inclement weather.

For the past two years he has at intervals had quite severe pain of a dull, aching character in his ankles, unaccompanied by any swelling and also by any pain in other joints. During the past six months he has had almost constant headache, referred to vertex, and has noticed marked dyspnea and rapid action of the heart upon the slightest exertion, so that he was unable to peddle. For the relief of these symptoms he came to the hospital.

The patient, upon admission, was well-nourished, but pale. There was marked visible pulsation of the carotids and temporals, which were tortuous to their very termination. The radial pulse was full and bounding, rate 110—a typical Corrigan or water-hammer pulse.

A loud murmur was heard over the carotids and femorals, and in the latter an almost complete double murmur. A few moist râles could be detected over the larger bronchi. There was marked diffuse pulsation of the entire precordial region at each systole. The apex-beat was visible in the sixth left interspace—one inch to the left of the left mammary line. It was strong and heaving. The area of dulness was increased in all directions. Auscultation revealed at the apex a musical see-saw murmur, both systolic and diastolic sounds being replaced—the diastolic murmur being louder and more blowing in character, the systolic murmur being transmitted to the left. Over the pulmonary area the second sound was accentuated. Over the aortic area, a long, loud musical diastolic murmur was heard, that, being followed to the apex, gradually decreased in intensity so that the second murmur heard at the apex was the transmitted aortic murmur. There was a trace of albumin, and a few pale hyaline casts in the urine.

During the time that the patient was under observation he frequently complained of severe vertical headache and of attacks of vertigo, which were relieved by nitro-glycerin, gr. $\frac{1}{16}$, and caffeine citrate, gr. v, every four hours. No digitalis was given at any time, the hypertrophy of the left ventricle being sufficient to compensate for the valvular trouble. About four days before the patient's death, it was observed that the respiration was of a stertorous character; the patient could not be aroused, and coma developed. The pupils were equal, somewhat contracted, and feebly responsive to light. Supra-orbital pressure caused a contraction of the muscles of the left side of face, arm, and leg. The right naso-labial fold was obliterated, the

right arm and leg fell perfectly lifeless, when released after being raised; there was apparently complete paralysis of the voluntary muscles of the right side of the face, of the right arm and leg. The respiration was irregular, almost Cheyne-Stokes in character, and stertorous. On account of the accompanying heart-disease, and the probability that a vegetation or calcareous mass had been detached, a diagnosis of embolism of the left middle cerebral artery was made. When the patient was examined twenty-four hours afterward, there was no response to supra-orbital pressure; both arms and legs, when raised and released, fell lifeless, as if paralyzed; there was now complete bilateral hemiplegia.

Ophthalmoscopic and electric examinations were unfortunately not made. The patient remained in this condition of deep coma, with irregular Cheyne-Stokes respiration for forty-eight hours longer, the character of the radial and temporal pulses and of the intra-cardiac sounds remaining unchanged. Death occurred very suddenly, the pulse, a few moments before, having been 120, full and bounding.

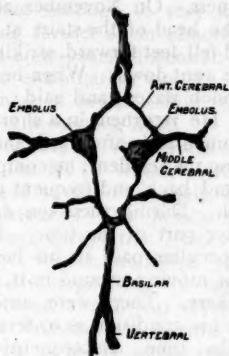
The post-mortem examination, thirty-six hours after death, showed evidences of hypostatic congestion in the posterior portions of both lungs. The pericardial cavity contained 3viii of clear yellowish fluid. There were a few "soldier spots" upon the visceral pericardium. The coronary vessels were markedly tortuous, but pervious. The veins were congested, both on the anterior and posterior surfaces of the heart.

The aortic valves were incompetent to the water test. The valves were irregular in outline, and when approximated left a considerable interval between their free edges. They were covered with freely detachable calcareous vegetations, so that each valve was a mass of cauliflower excrescences; some of the latter were softer, more like masses of ordinary fibrin, and had not undergone calcareous change. The aortic orifice was narrowed. The mitral valve was so incompetent as to admit four finger-tips; the free edges were smooth; there was an elevation in the middle of the anterior cusp, the convexity of which was directed toward the left auricle; it was somewhat conical in shape, with an opening on the ventricular surface of the valve leading into a cavity, showing this to be an aneurism of the mitral valve. The cavity of the left ventricle measured 11 cm., its wall 20 mm.; there was thus marked excentric hypertrophy. The right ventricle was also hypertrophied.

The membranes of the brain were markedly congested, but not adherent or thickened. Upon dissecting out and opening the vessels of the circle of Willis, a calcareous embolus was found, as shown in the annexed illustration, at the intra-cranial termination of each internal carotid artery, situated at the point of origin of the middle cerebral arteries in such a manner as to completely occlude the lumen of both these vessels. The distal portion of each was empty and the vessel-walls were very anemic. The emboli were also so situated as to completely prevent the entrance of blood into the anterior cerebral arteries at their origin from the internal carotids.

¹ Read at the meeting of the Cook County Hospital Clinical Society of Chicago, November 5, 1891.

There were extensive areas of softening in the interior of the brain, bilateral and symmetrical, involving the corpus striatum and optic thalamus, and in the brain-substance surrounding the lateral ventricles on all sides, viz., the frontal, upper part of the temporal, the ascending parietal and the frontal convolutions.



The blood-supply of the brain is derived from the vertebral and carotid arteries; and the mode of origin of the left carotid explains why embolism should be more frequent on the left side. In the case reported the first embolus was undoubtedly that on the left side, causing right hemiplegia. The left carotid arises directly from the highest part of the arch of the aorta, and its course is almost a direct continuation of the direction of the current of blood in the aorta, whereas the right carotid comes from the innominate, which arises from the aorta at an angle with the course of the aortic blood-current. Hence clots washed from the cardiac valves pass more readily into the left carotid than into the right. The consecutive embolism first of the left and then of the right is easily explained, and yet is extremely interesting. The circle of Willis, it will be remembered, is formed by the two posterior communicating arteries, which pass one on each side from the internal carotids to the posterior cerebrals, into which the basilar divides, and by the anterior communicating artery, between the two anterior cerebrals of the internal carotid. The latter divides on each side into the anterior and middle cerebral, and from these and the posterior cerebral the blood-supply of each hemisphere is derived.

From the circle of Willis and the commencement of the three cerebral arteries, small branches arise that supply the central ganglia of the hemisphere and the adjacent white substance, while the three arteries themselves ramify over the surface of the brain and supply the gray cortex and the greater part of the white matter of the hemisphere. Between these central and cortical systems there are no anastomoses, nor do the central branches communicate with each other, so that embolism of a main

vessel, like the middle cerebral, would lead to extensive anemic necrosis or softening.

The central arteries consist of two medial and four lateral groups, two on each side; the latter supply the chief part of the central ganglia, and the anterior lateral arise at the beginning of the middle cerebral arteries and supply the internal capsule, lenticular and caudate nuclei, and optic thalamus.

Of the supply to the cortex, that of the middle cerebral is the most extensive. This vessel divides opposite the island of Reil into four branches, which have the following distribution:

- I. Third or inferior frontal convolution.
- II. Lower two-thirds of ascending frontal and root of middle frontal.
- III. Whole of ascending parietal, and superior parietal lobes, and part of inferior parietal lobe.
- IV. Remainder of inferior parietal and posterior part of first two temporal convolutions.

From this last branch, near its origin, one or two large branches arise, which supply the greater part of the first and second temporal convolutions. The anterior cerebral supplies the remainder of the frontal lobe, the quadrate or lobus precuneus, gyrus fornicatus, and marginal convolutions of the mesial aspect. So that the extensive bilateral softening found post-mortem was in perfect accord with the experimentally determined area of distribution of the anterior and middle cerebral arteries.

In most cases of cerebral embolism the plug comes from the heart, and its source is either diseased valves, or vegetations that have been detached and carried along with the blood-current. The embolus may come from either the mitral or aortic valve, more frequently from the former, and especially when there is mitral stenosis. Embolism is most frequent between later childhood and middle life. There has usually been some antecedent cause for the endocarditis, *e.g.*, rheumatism, chorea, or scarlet fever. As in the case reported, the signs of organic heart disease are almost always to be recognized previously to or at the time of embolism.

An immediate exciting cause is rarely to be traced. In the case reported the patient had passed a comparatively quiet night in bed, and was found comatose, without any prodromal symptoms except an increase of headache. The plug in a case of embolism may consist of fibrin (usually decolorized), of vegetation, soft or firm, from a cardiac valve; sometimes of a calcareous mass from a valve of the heart.

The embolus is usually arrested where the artery is narrowed by giving off a large branch, very often at a bifurcation, as shown in the specimen. The middle cerebral arteries and their branches are the most frequent seat of embolism, because they are the direct continuation of the carotids.

In the case in question the emboli, which were calcareous vegetations, are lodged at the very termination of the internal carotids, so as to occlude both the anterior and middle cerebral arteries.

In rare instances only—one case being reported by Carrington¹—have both middle cerebrals been obstructed. The effect of this almost simultaneous blocking was to cause an extensive area of anemic necrosis or softening, which pathologically represents broken-down nerve-elements separated by an effusion of serum.

The focal symptoms in the case were quite characteristic of a plugging of the middle cerebrals, viz., first, right hemiplegia, indicating embolism of the left side; then, twenty-four hours after, left hemiplegia, showing an obstruction on the right side. Whether aphasia was present or not it was impossible to determine. Bilateral obstruction is rarely simultaneous, but sometimes occurs in quick succession, as in the case reported. The differential diagnosis is especially to be made from cerebral hemorrhage and thrombosis. The prognosis in such a case as this is necessarily grave. Treatment is not likely to be of much avail.

CEREBRAL THROMBOSIS, WITH REPORT OF TWO CASES.²

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CHARCOT has with much truth said that he that is master of the circulation of the brain, is likewise master of cerebral pathology. This, of course, is not because of any lack of importance on the part of the structures through which the vessels pass, but because, in the first place, a thorough and accurate knowledge of the intra-cranial vascular system of necessity implies familiarity with the different vascular areas supplied or drained by any particular blood-channel; and in the second place, because lesions of the vessels constitute the pathologic basis in the large majority of all cases of cerebral diseases.

I have been frequently impressed with the belief that too little attention has heretofore been given to the venous as compared with that given the arterial circulation of the brain. Arterial lesions are, of course, more frequent than venous; but thrombosis and phlebitis of the cerebral venous channels, which usually go hand in hand, even if of less importance than the arterial, are still of sufficient moment to often compromise the life of a patient.

Two cases that have recently fallen under my ob-

servation have especially excited my interest in this subject, and I will first present a brief record of them.

CASE I (not seen during life).—Mr. S. D. M., aged forty-five years, an insurance agent; a heavy-set, active business man; had never suffered from any serious illness. On November 28, 1890, while standing at the head of the stairs at his residence, he slipped and fell, feet forward, striking his head on the steps as he went down. When he got up he appeared very much dazed, and said: "Let me get out doors." He returned in a short time, feeling very faint. Immediately afterward, and for about ten days succeeding the accident, he complained of pain in his head and back and frequent nausea, and he often vomited. During these ten days, he was in bed the greater part of the time. He often complained of a peculiar pain in his head, as though something was moving around in it, without designating just where. There were, unfortunately, no data showing his condition as to fever, circulation, etc., during that time. Subsequently, he went to his office and attended to his business, making frequent complaints, such as he had made while in bed at home. The nausea and vomiting persisted.

On the morning of December 17th, when about to set out for his office, he remarked that he was feeling badly, and that they need not be surprised if he should come home before evening.

On the 18th, he did not go to his office at all, but, as before, complained of nausea, pain in the head and in the back.

About half-past one on the morning of the 19th of December, his wife left the room to attend to a sick child. He expressed his disinclination to have her leave, because he was himself feeling badly, but said perhaps she had better go. She returned quietly to his room at three o'clock, when he was breathing regularly. She again returned at five o'clock and found him unconscious, with stertorous breathing.

A physician was summoned shortly after the discovery of his unconsciousness; the pupils were not markedly contracted, but the breathing was somewhat slow. No other information was obtained, the coma being then very deep and terminating in death at noon, December 19th.

On the morning of December 20th, at nine o'clock, the family requested Dr. Howard McCullough and myself to examine the skull and brain in order to ascertain whether there was any gross lesion of traumatic origin that would account for the death. We found the body well nourished; rigor mortis well marked; no external evidence of injury. Upon reflecting the scalp we found, almost in the center of the vertex, an ecchymotic spot about the size of a silver quarter, just beneath and involving the periosteum. Upon removing the brain we found marked adhesion of the dura mater of the convexities along the margins of the longitudinal fissures. The sinuses of the dura mater were obviously diseased. The lining membrane of the superior longitudinal and left lateral sinuses especially were roughened and covered with strongly adherent and

¹ Path. Soc. Trans., vol. xxxv, 1884, p. 108.

² Read before the Michigan Southern Medical Society.

coagulated blood. In the left lateral sinus an ante-mortem clot, firmly organized and about one-fourth of an inch long, completely blocked the sinus and terminated at the extremity in soft, dark blood of post-mortem deposition. The pia mater was intensely congested. The dependent portions of the ventricular cavity contained a considerable quantity of bloody serum—enough to very nearly fill the horns. Nothing further of an abnormal character was discovered upon coarse dissection of the brain. No microscopic examination was made, because of the sudden illness of myself before the brain had been placed in a preserving fluid.

CASE II.—On June 14, 1891, I was called in consultation with Dr. H. D. Wood, of Angola, to see Miss B. O., aged twenty-four years, and obtained the following history: The patient's health had always been good, except that from childhood she had been subject to sick headache. When a child she also had a discharge from the ear. Recovery from this was complete, and was never followed by any recurrence. About four months ago she had what was thought to be the grippe, though she did not go to bed or call a physician. Her symptoms were severe headache and general aching, lasting a few days. From this she made a fair recovery, but it was evidently not complete, for she remained weak and her family think there was progressive loss of flesh. About the first of May, 1891, Dr. Wood was called, and found her with a temperature of 101° and a pulse-rate ranging from 70 to 100. Since that time she has not been free from fever of about the same intensity. About the first of June (two weeks before I was called in consultation) she was seized with violent headache that persisted up to the time of my visit. There had been some nausea and a little vomiting. There were no obvious disturbances of motility, sensation, vision, or hearing, although no careful tests were made.

On June 13th, she grew apathetic, and gradually passed into a state of coma from which she could not be aroused.

At the time of my examination, she made no response to loud calls close to her ear. The conjunctival reflex was almost entirely abolished, and the pupils were moderately but evenly contracted and entirely irresponsive to light. There was no strabismus or nystagmus. There was marked edema of both eyelids, with moderate but still very perceptible exophthalmos. There was also considerable distention of the veins of the forehead; the left external jugular vein was very prominent. There was but slight response to a pin-prick on the feet, and the plantar reflex was abolished. I did not see the patient again, but she was very carefully watched by Dr. Wood, who reports that there were no new symptoms manifested, but an intensification of all the symptoms mentioned. The coma became deeper, the edema of the eyelids greater, the exophthalmos more marked, the distention of the veins of the forehead more prominent. Death occurred four days after my visit.

I made a diagnosis of cerebral thrombosis, probably of the marantic type, and gave an absolutely unfavorable prognosis, in which Dr. Wood fully

concurred. I was especially anxious to be able to test the diagnosis by the findings of a post-mortem examination, but, though Dr. Wood made every effort to secure one, he was unable to do so.

In these two cases, in one of which the diagnosis was made during life, with no opportunity to verify it after death, and in the other discovered only upon post-mortem examination, we have illustrations of what I am inclined to think would be found much more frequently than is supposed, if the symptomatology were more fully understood, and the disease therefore more easily recognized. In running through the literature of this subject as contained in the standard text-books of the times, we are met with extremely vague and unsatisfactory clinical pictures to serve as the bases of diagnosis. By some authors the subject is treated as only of pathologic interest, and the consideration of the symptoms, because of their vagueness, is dismissed in a few words. The time has come when this position is not fully, if at all, justified. There are certainly many cases of cerebral thrombosis in which the diagnosis can be made with as strong a degree of probability as obtains in many another well-recognized disease. In the attempt to study these symptoms upon an anatomic and physiologic basis, we must bear in mind that the venous channels known as sinuses of the dura mater are extremely complicated and quite extensive in their anatomic relations, and most diverse in regard to the importance of the structures with which they are severally in relation. The effects, therefore, of occlusion of one of these channels at any particular point would depend upon the anatomic and functional importance of the structures the venous blood of which travels toward the heart through this particular channel, and also upon the facilities for carrying the current through collateral avenues. When the superior longitudinal sinus is involved, headache is usually a prominent symptom, owing doubtless to the retardation of the blood-current from certain parts of the intra-cranial structures. In addition to this we have distention of the veins of the mucous lining of the nose, and epistaxis; therefore, becomes of frequent occurrence. The close relation of the petrosal sinuses to the mechanism of the ear points to their involvement when brain-symptoms follow certain forms of ear-disease. The blocking of the lateral sinuses would cause more or less complete obstruction of the current through the superior longitudinal sinuses. Turning now to the basis of the brain, we find wonderful provisions made for carrying on the circulation if one channel becomes obstructed. The sinuses upon opposite sides of the median line are united by transverse channels of large size, and in addition the anterior extremity of the system terminates in a large and important vein known as the ophthalmic,

which, passing through the orbit, is placed in direct communication with the external jugular through the facial vein.

The anatomic relations are thus extremely fortunate, from a diagnostic standpoint. For instance, the obstruction that prevents the blood from passing out of the ophthalmic vein, in a backward direction, gives rise to very definite and characteristic symptoms. Among others, there are distention of the frontal veins, edema of the eyelids, and exophthalmos. There are, of course, at the same time functional disturbances of the retina, ranging from slight amblyopia to complete amaurosis, with abolition of the light-reflex. Another circumstance that occasionally enables us to recognize occlusion is the very curious anatomic arrangement by which several very important nerves, namely, the third, fourth, and sixth, actually penetrate the wall of the cavernous sinus and pass through it on their way to the muscles that they supply, separated from the venous blood within the sinus by its lining membrane alone. It at once becomes very obvious that occlusion of the blood-current in the cavernous sinus, with the attendant outward pressure that must necessarily follow, by reason of the pressure exerted by the forces of the circulation through the capillaries, might very easily compromise the function of any or all of these nerves. In this way ophthalmoplegia, ptosis, or strabismus may become strongly corroborative symptoms in establishing the diagnosis. It is not my intention to review this extensive field in detail, but rather to point out a few of the more important and better established facts upon which we may fall back in establishing a diagnosis of cerebral thrombosis.

In the first of the foregoing cases, the question of diagnosis is, of course, not involved, and we may turn at once to the unfortunately imperfect clinical picture that we are able to obtain. Briefly, then, we may assume that occlusion of the left lateral sinus and plastic inflammation of the lining membrane of the superior longitudinal sinus gave rise to a train of symptoms of a fairly well defined character. The absence of a careful scientific study before death can, of course, be only vainly regretted. We know, however, that there had been persistent headache, with nausea and general malaise. Of the circulation and temperature, until within a brief time prior to death, we know nothing. Anatomically we find the pia mater, which normally pours its venous blood into these venous channels that had been obstructed, intensely congested, and we find further evidence of interference with the circulation by the bloody effusion, with which the ventricles were well distended, in symptoms and phenomena of circulatory obstruction.

In the second case, the diagnosis of thrombosis

of the basal system rests mainly on six symptoms, namely: distention of the frontal veins, edema of the eyelids, exophthalmos, great distention of the left external jugular vein, abolition of the light-reflex, while unconsciousness, with slight fever, was, of course, corroborative of the existence of inflammatory action undoubtedly involving the lining membrane of the sinuses. I hold that in this case the diagnosis is positive, and taken in connection with the first case and the cases that have been reported, principally in Russia and Germany, will, I trust, assist in forming a rational foundation for the diagnosis of this not very rare, but rarely recognized affection.

Since writing the foregoing, I have seen another case that I think belongs in the same category.

On November 21, 1891, I visited Mr. L. T., in consultation with Dr. J. W. Cartwright, of Payne, Ohio, of whom I obtained the following history: About ten days previously the patient had been seized with a severe attack of facial erysipelas. This had run its usual course, and had yielded to the ordinary treatment. At the time of my visit there was practically nothing left of the dermatitis but the customary residual hyperemia and coarse desquamation.

Alarming brain-symptoms had developed in the last twenty-four hours, and I found the following conditions present: There was external squint, incomplete ptosis, nystagmus, comparative dilatation of the right pupil, and intense injection of both conjunctivæ. There was also partial coma, and hyperpyrexia, the temperature at the time of my visit being $106\frac{2}{3}^{\circ}$. The patient died two hours later.

In this case the specific process had travelled along the radicles of the facial vein, and through their relation with the ophthalmic, along this to the cavernous sinuses. A similar connection has been reported in several published cases, in which a specific dermatitis had produced a phlebitis of the sinus by extension through the channels referred to. A very interesting case of cerebral thrombosis involving the left cavernous sinuses has recently been reported by Destot (*La Province Méd.*, Lyons, 1891, No. 24). In this case the specific process originated in an acniform pustule of the nose that was apparently benign. Like the last of my cases reported, it emphasizes one of the dangers of specific inflammation of the parts contiguous to the brain.

Tracheotomy in an Infant Four Days Old.—CLEGG (*British Medical Journal*, No. 1619, p. 68) has reported the case of an almost moribund infant, *four days old*, in which he performed tracheotomy on account of the presence of a large nevoid mass beneath the tongue, rendering respiration almost impossible. The child lived for thirty-six hours, but finally died.

SYSTEMATIC USE OF THE EYE IN TEACHING ANATOMY.¹

BY W. P. CARR, M.D.,
OF WASHINGTON, D. C.

IN this iconoclastic age, a sentiment seems to be growing among medical men that lectures are of little use for didactic purposes. I wish to enter my protest against this idea, and to point out what I consider an important method of enhancing their value. The aim of the lecturer, I take it, is not so much to teach anatomic details that are much better learned from books and dissections, as to teach the student, first, how to study, how to understand, how to fix in mind the broad outlines and principles of the laws of morphology, the meaning of structures; and, secondly, to teach him those methods of observation that will enable him to add the necessary details for himself. In doing this we all recognize the importance of engaging the eye as well as the ear of the student. I have become more and more convinced of the importance of a systematic appeal to the student's eye and ear at the same time, and more and more convinced that word-pictures alone, no matter how forcible and true, make but comparatively dim and transient impressions upon the brain. Most anatomic facts are remembered by means of mental pictures—mental photographs upon the brain. Suppose you wish to remember the shape of some object. You call up a mental picture of it that you have, at some former time, stored away in your brain. Not only so, most of these mental photographs are composite photographs, made by numerous impressions, placed one over the other. Especially is this the case when the object to be remembered is a familiar one; and frequently, blended in the general outlines of the picture, and yet distinct, you may recognize some individual object of the class you wish to recall. Let me mention the great trochanter of the femur. Immediately there rises before your mind's eye a representation of the upper end of that bone. You see the trochanter, its position, shape, and relations; and most likely you recognize in the composite the outlines of some particular femur that you have handled oftenest, or, that diagram in your Anatomy that so frequently meets your eye. These facts show, I think, that it is by means of composite mental photographs that we retain the memory of form, memory of relation, and memory of position. The important question is how best to produce and fix these images.

Naturally, different persons possess in very different degrees this power of mental photography, as is evidenced by the ease with which some recall the

features of absent friends, and the utter lack of such ability in others. But I am sure the faculty can be cultivated and brought to a satisfactory degree of efficiency in all, or nearly all persons. To do this we must begin with simple figures, and gradually add details. Everyone can remember such simple figures as the cross, square, circle, etc., but few can carry in mind a complicated arabesque. I think the older anatomists had some such idea in mind when they tried to find in the bones fanciful resemblances to familiar objects. They were trying, perhaps unconsciously, to use some simple image already formed upon the brain, as a durable basis upon which to build a more elaborate composite. But the idea may to great advantage be carried much further. I shall never forget how, when beginning the study of anatomy, I was helped in fixing the human ethmoid by a few chalk-marks placed upon the board by my professor, Dr. Elliott Canes. Simply a cross, to represent a front view of the vertical plate and *christa galli*, and the horizontal plate, and an oblong mass of white suspended from the arm of each cross, to represent the lateral masses. By comparing this image with the bone itself, a mental photograph was formed too simple ever to be forgotten. Having formed, in this way, a simple, durable image, it becomes an easy matter to modify it in detail. We may add the turbinal processes, the *ossa plana*, show their relation to the orbits and the frontal bone, and having gone as far as convenient with the chalk, refer to more elaborate diagrams for details, and finally let the student finish by studying the bone itself. And how much more intelligently he can do it, after we have prepared him in this way by giving him a simple, durable, but plastic image as a basis, and by explaining to him the morphologic significance of the bone, as well as other interesting and practical facts relating to it. All the other bones may be treated in the same manner. The superior maxilla, for instance, may be built up on a triangular pyramid; the scapula upon a triangular prism, corresponding exactly to the triangular rod of cartilage from which it is developed, and even a bone of as variable form as a vertebra may be illustrated in such manner that a composite mental photograph of it is formed in which all of its variations are recognized, from the stunted tip of the coccyx to the typical dorsal vertebra, or the occipital bone, and even the other vertebral segments of the skull.

The ruder the drawing the better, for we do not now wish to impress the shape of the component parts, but the shape of the bone as a whole, and the relative position of its parts simply represented by masses of black and white.

There are, however, some things that cannot be illustrated by even the most carefully prepared flat

¹ Original abstract of a paper read before the Association of American Anatomists in Washington, September 23, 1891.

picture. Such things as the facial nerve in the aqueduct of Fallopius, the ventricles of the brain, the fissure of Sylvius, cannot be drawn satisfactorily upon a plane surface. It is impossible to show the thing itself to a large class of students, on account of its small size. In such cases we must resort to models large enough to be seen from all parts of the room. It will not answer to have a small model in the hands of each student, unless, with a pointer, we have a demonstrator stand over each student as the lecture proceeds. For teaching purposes I have a large, rough model of the left side of the brain, made of papier-maché, five feet long, and yet light and easily handled. It is rough and apparently simple-looking, and yet I can show upon it the relative position and general shape of nearly every important part of the brain, both internal and external. I conceived the idea of making it, mainly to show what I cannot show in diagrams, the lateral ventricle, particularly its descending horn, the manner in which the pia mater enters to form the choroid plexuses, the velum interpositum, etc., and the fact that the five vesicles of the fetal brain remain distinct in the adult.

My conclusions are:

1. That we remember form, position, and relations by means of mental photographs.
2. That these are composite photographs.
3. That they may be easily modified from time to time, but cannot be easily effaced or radically altered.
4. That these images are formed by the eye, and understood through the ear.
5. That the power of mental photography varies in different persons, but may be cultivated in all, or nearly all, to a satisfactory point.
6. That the way to do this is to produce, first, a very simple impression, which, consequently, will be durable, and then more and more complicated images, that will not only coincide with and strengthen the first, but will, at the same time, add the necessary details.
7. That in doing this the primitive designs are best drawn upon the blackboard before the student's eyes; and that, afterward, a series of large diagrams should be used, or models in case diagrams are not satisfactory.
8. That the student is by these means taught how to appreciate and study Nature for himself in a calm, scientific, and observing manner.

The Prophylaxis of Scarletinal Nephritis.—In more than a hundred cases of scarlatina seen in the course of six years, in which the patients were for three weeks kept upon a milk diet, ZIEGLER has not once encountered nephritis as a complication.—*La Semaine Méd.*, No. 4, 1892.

ORIGINAL LECTURE.

ELEPHANTIASIS ARABUM OF THE LEG; LIGATION OF THE FEMORAL ARTERY; RECOVERY: SUBSEQUENT PLEBITIS AND THROMBOSIS; SEPTICEMIA; DEATH.

*A Clinical Lecture
delivered at the Buffalo General Hospital, Surgical Clinic,
November 21, 1891.*

BY PROF. ROSWELL PARK, M.D.

ALBERT J., thirty-six years of age, came to the Buffalo General Hospital in October, 1890, giving the following brief history: Fourteen years ago he fell from a trapeze, and injured the right hip and iliac region. He suffered pain and soreness in the part for a number of weeks, after which time he resumed his work as wood-carver. Not until six months later did the present swelling commence, and the enlargement of the limb since then has been gradual but constant. It has finally attained such proportions as to force the man to give up his occupation. He has never suffered from any constitutional disease. The family history is excellent. He has never had upon the leg any ulcer or fissure of the skin from which fluid has escaped.

This brief history is all that is attainable, but it is, perhaps, sufficient for present purposes. I expose the lower part of the body and show you the tremendous difference between the right and left lower extremities. In order to have measurements for subsequent comparison, I will use the tape-line and give you the circumference at the following points:

		Right.	Left.
Ankle	(inches)	13½	9
Knee	"	22½	15
Middle of thigh	"	28½	20½

You will observe no ulceration anywhere about the skin, although around the middle of the leg there is great thickening and roughening of the epidermis, which presents quite a corneous appearance. There is nothing else for which this condition can be mistaken. We have here to deal with a case of elephantiasis Arabum, or the common form of elephantiasis known by the name pachyderma, and, also, from its frequency in the West Indies, as Barbadoes leg. The condition, virtually, is a hypertrophic affection of the dermal and subdermal tissues, with enormous thickening of the skin and more or less edema. Such a condition as is here presented is quite rare in this region, although very frequent in the tropics; in fact, the disease in any such form as this is well-nigh unknown in Buffalo. I have seen a similar affection confined to one hand and forearm in a young man, at the time an inmate of the penitentiary, and I am familiar with a case in an adjoining town of a decrepit elderly woman, whose feet and legs, up to the knees, are involved in a similar condition. These three cases comprise my entire experience in eight years in western New York.

Pathologically, the disease, when of the acquired form, begins as an inflammatory affection of the bloodvessels, which sometimes is so acute as to cause a violent cellulitis resembling erysipelas, at other times so chronic as to

be accompanied by virtually no inflammatory phenomena. The cases in which the lower limbs are involved nearly always begin with acute manifestations. This is not quite true of elephantiasis of the genitals, of the upper part of the body, or of the face. The lower extremities and the external genitalia are by far the most commonly affected regions. In various treatises you will see pictorial representations of extreme cases of this condition; for instance, where one or both legs are so enormously enlarged as practically to confine the patient to the recumbent posture; also cases in which the scrotum is so involved as almost to touch the floor, hanging like an immense bag between the limbs, and where the penis is entirely lost in the thickened integument, only a minute opening and an excoriated groove marking the site where the urine escapes. In females the labia and the clitoris are similarly affected. But such instances as these are rarely seen outside of hot countries, and they have most frequently been reported from India. In such cases as this before you, the disease usually begins as a cellulitis with excessive edema, and with lymphangitis and perilymphangitis, often even with phlebitis and periphlebitis. Above the limit of swelling, purplish-red lines will often be seen extending toward the trunk, showing the implication of the lymphatic vessels. It is common in such instances to get a history of recurring inflammatory attacks, by each of which the preëxisting condition is made worse. As these cases progress, the epidermis becomes very much thickened in spots, and papillomatous outgrowths of large size, such as you see upon this man's limb, appear. As the surface becomes thus hardened and corneous, fissures or cracks are formed, which extend, to become excoriations and even foul ulcers, from the former of which a thin serous fluid dribbles or oozes, this fluid being pure or nearly pure lymph; while from the ulcers there comes a discharge of thin sanious pus. In ill-nourished patients, and in those careless in the matter of personal cleanliness, this condition may become offensive and disgusting. There is little pain, patients complaining for the most part merely of the augmented size and weight of the part involved, suffering but little, unless a fissure extends down to a point where a nerve is exposed, in which case we have to deal with an acutely irritable fissure or ulcer.

So far as the causes of elephantiasis are concerned, we may divide them into two categories and state that elephantiasis may be of congenital or of acquired form. Both of these forms are practically connected with the lymphatic system. Whenever you have the opportunity, I advise you to consult a somewhat rare little book by Dr. Busey, of Washington, upon *Congenital and Acquired Malformations of the Lymphatic System*, which is a perfect mine of curiosities and clinical facts relating to the subject of this lecture. As you well know, varicosities of the lymphatic vessels may occur congenitally, just as they do in the venous system, while at other times the lymphatics are congenitally deficient or some anomalous condition exists by which their proper channels of communication with the central lymph-stream are cut off or obstructed. It is possible that from some such cause as this an infant may be born with the beginnings of this malady implanted within it, but it is not so much of the congenital as of the acquired form of which I wish to speak

to you. Of this form we may say that it is always inseparably connected with some impediment to the return of the lymph-stream, whether this be in the lymph-vessels, in the bloodvessels, or in the surrounding tissues. In this particular case, I imagine that, as the result of the injury which this man sustained many years ago, there was either a rupture of the principal lymph-trunk of this extremity, or some intra-pelvic inflammatory or thrombotic condition, by which the return of lymph from this leg was gradually impeded, as the result of which obstruction the present condition has been slowly engendered. I can find no other explanation for it in his case. It may happen to you to find in some other case, which will remind you of this, a history of some such trouble as phlegmasia alba dolens or of long-standing varicosities, with subsequent phlebitis and thrombosis, resulting in venous and subsequent lymphatic obliteration, or of some more or less extensive ulcer that has become inflamed and has set up a train of disastrous sequelæ, or of some injury such as fracture, penetrating wound, violent contusion, or something of that kind. Whenever this disease is mentioned there comes naturally into one's mind that affection which, before all others, is its most frequent cause in tropical climates. I allude to the presence in the system of a parasite known as the *filaria sanguinis hominis*, which is a very minute, thread-like worm, upon which the researches of Manson have thrown a flood of light and the life-history of which he has revealed. It appears from his studies that the microscopic embryos of this worm abound in drinking-water in regions where the disease is best known. This water is taken into the system; the embryos fail to be killed by the digestive juices, but pierce the intestinal wall and are taken up with the products of digestion by the absorbents. Once having gained an entrance in this way, they select the lymphatic vessels as their habitat, and here they manifest a peculiarity that has no analogue that I recall in the study of disease in man. Within the innermost recesses of the lymph-nodes and lymph-vascular organs they hide, as it were, during the active working and waking hours, but at about sunset they emerge from their hiding-places and are then found in the lymph and especially in the blood, where they sport and play until about the hour of sunrise, when they retire for the day, again to go through this diurnal or rather nocturnal program. There is nothing chimeric or fanciful about this account. *Filaria* disease has been carefully studied both in England and in India, and hundreds of observations attest the truth of these statements. The disease has even been experimented with in this way: By making those subject to it sleep during the daytime and work or keep awake at night, the program given has been exactly reversed; in other words, the *filariae* disport themselves in the blood during the hours of rest and sleep, and retire completely from observation during the hours of activity. These statements do not constitute a digression from the subject of this lecture, but serve to explain the most common etiologic factor in the production of this disease the world over. It is by the presence of these minute organisms within the lymphatic vessels that there is set up a condition of chronic inflammation, of dilatation, and of obstruction of the natural lymph-channels that slowly brings about this enormous distention and hypertrophy of the

soft parts. In the case in hand, however, inasmuch as this man has never been in tropical climates and presents the disease in one limb only, there is no reason to suspect that we have here to do with the results of filaria disease.

So far as diagnosis is concerned, there is virtually nothing else for which such a condition as this can be mistaken. One has to decide really only between the congenital and the acquired form, a matter that the history of the case at once settles.

So far as life is concerned the prognosis is usually not bad; the question in such cases is mainly as to how long the patient can tolerate or survive the anatomic condition with which he is handicapped; but so far as recovery is concerned, the prognosis is bad, there being but little, if any, possibility of any such happy termination. On the contrary, there is rather danger of a continuance of growth, together with the disastrous results of greater and greater separation from the source of nutritive supply and of the occurrence of sequelæ, such as ulceration, including the various phenomena of septic phlebitis and of sepsis in other of its various manifestations. With great care and attention to cleanliness, with rest of the part, and perhaps with such applications as shall keep the epidermal surface anointed and prevent the formation of fissures and excoriations, patients may be made reasonably comfortable, although the real progress of the disease be not stayed.

So far as radical treatment or cure is concerned, it can only be applied in one of two ways—either by complete ablation of the part, or by cutting off the principal channel of nutrition and, as it were, starving the limb. In 1851, the late Dr. Carnochan, of New York, first suggested in such cases as this the ligation of the principal artery of the lower extremity. He carried this out with some measure of success, and his practice has found imitators in all parts of the globe. The principle upon which this surgical treatment is based is good; we run the risk, however, of overdoing that for which we are striving, and there is always danger of sloughing or even of gangrene from the operation.

In the present case, this man has worn bandages and elastic stockings of various design and manufacture, and he thinks that by the continuous pressure that they have exerted the rate of growth of the leg has been somewhat checked; but he has now reached a point where it is no longer possible for him to pursue his trade, and he desires to have done whatever offers any prospect of restoring his usefulness or else of terminating his career; and he has accepted very gladly the proposition made to him to have the femoral artery tied, although I have not failed to set forth to him the unpleasant possible results of such an operation. Accordingly, he presents himself before you to-day for this purpose. The operation has nothing about it peculiar, save that in such a case as this, in which the pachydermatous condition extends so high in the groin, the operation will be mechanically more difficult, although, I apprehend, no more dangerous.

The operation was performed October 25, 1890, under ether. The prediction with regard to the mechanical difficulty of the ligation of the femoral artery below Poupart's ligament was justified by the fact that it lay at such great depth. The necessary incision had to be

made much longer than usual, and only after penetrating to a depth of three inches was the artery reached. In other words, the artery had to be tied at a depth corresponding to the length of the index finger. Otherwise the operation passed off without incident. It was made after the usual aseptic manner and the wound was covered with aseptic dressing. The limb was wrapped in cotton-wool and placed on a single inclined plane. The patient recovered from the procedure without accident or particular delay.

One month after the operation that was performed in your presence, I show you the patient with elephantiasis, in order that you may judge for yourselves of the result. I recall to your minds the measurements taken upon a previous occasion, and repeating them, I enable you to see that there has been a decrease in the circumference of the knee and thigh of very nearly five inches. The circumference at the ankle has decreased only an inch and a half, or perhaps two inches. You may judge of the man's general condition for yourselves, and you hear his statement to the effect that he moves the leg with much less sense of effort. He expects now to leave the hospital within a couple of weeks, and he has promised to return after a while and submit himself once more to your inspection.

January 20, 1891. The promise that this patient made to you upon the occasion when you last saw him has been fulfilled, but in quite an unexpected way, for this time he is brought into the clinic-room upon a stretcher and in almost an unconscious condition. He left the hospital as he intended; he went back to work; but from some cause, concerning which his present condition prevents us from learning, he was brought in by the ambulance yesterday in a semi-delirious and irrational state of mind, with high fever and with the appearance of the limb that I shall show you. You see that it is now once more enormously swollen, and it presents every local appearance of inflammation, especially along the course of the superficial veins; you will note that the skin is red and very edematous, and that he can scarcely move the limb at all. I am thus unable to tell you how this has occurred, but I show the case to you now as one of intense phlebitis, with every evidence of thrombosis and of septic infection, and I may say now that his condition is one that justifies a most unfavorable prognosis. Were it not that he can be moved without visible suffering, I should hardly have ventured to bring him before you. I imagine that with his present condition he cannot live forty-eight hours. To just what extent this accident depends upon the result of the operation I am quite unable to say. Certainly, as you know, he was temporarily benefited by the operation, and was perfectly satisfied with its immediate results. There was no phlebitis at that time, and I imagine that he has either been intemperate or careless about exposure, or both, in order to bring about the state of affairs that you see here.

The patient died about thirty-six hours after he was exhibited to the class. An autopsy revealed a condition of septic phlebitis with general septicæmia. There were no metastatic abscesses. The right lower extremity was enormously enlarged; the integument and subcutaneous tissues were thickened, hanging in folds. The arch of the diaphragm, on the right side, reached to the fourth inter-

costal space; on the left side to the sixth rib. The pleurae were free and normal, save for a few slight bands at the right apex.

The pericardium was normal. The heart weighed thirteen ounces; the aorta and pulmonary valves were competent. Behind the tricuspid valve was a well-organized clot. The endocardium and myocardium of the right side were normal. The left endocardium was deeply injected (not post-mortem staining), otherwise normal. There was slight atheroma. The aorta, the aortic valves, and the mitral leaflets were slightly injected. The left lung weighed nineteen ounces. It was emphysematous and edematous, and presented minute petechiae beneath the pleural surfaces.

The bronchial mucosa was injected. There were patches of atheroma in the bronchial vessels (pulmonary); minute infarctions in the right lung; general emphysema, and edema of the lower portions.

The left kidney weighed nine ounces; the capsule was adherent, the cortex diminished, and markedly injected. The right kidney was like the left.

The spleen weighed thirteen ounces; it was soft, enlarged. The liver was fatty. The skin of the right lower extremity was much thickened, and with the subcutaneous tissues hung in folds from the leg. There was an increase in the fibrous septa of the subcutaneous tissue. The femoral (right) artery was excised at the point of a former ligation (two months previously), showing a well-organized clot. The collateral circulation was carried on by the profunda.

A cause of the elephantiasis was not found.

Examinations of skin, under the microscope, showed that the epidermis was enormously thickened, with a marked increase of connective tissue in the cutis vera, this last having widely dilated lymph-spaces; there were several areas of small round-cell collections in the connective tissue of the true skin. About the vessels of the lungs there was a marked increase of connective tissue, similar to that of the skin; this was also edematous.

CLINICAL MEMORANDA.

A CASE OF PARALYSIS FOLLOWING MEASLES.

BY JAMES STRATTON CARPENTER, A.M., M.D.,
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THE rarity of occurrence of paralysis as a sequel to morbilli has been fully shown by Dr. H. B. Allyn, in a recent number of THE MEDICAL NEWS, wherein the author was able to collate only forty-one cases of this disorder after a most extended research. In a practice of ten years I have seen but a single case, which, until I met with Dr. Allyn's article, had been well-nigh forgotten. I desire to place this on record, as adding one more to the number of cases thus far observed.

Gertrude E., a child of three years of age, was treated by me for a mild attack of measles, two other children in the house being sick with the disease at the same time, and in an equally mild form. Three weeks prior to the outbreak of measles, I had treated them for a mild scarlatinal trouble, which had been fully recovered from before the measles had appeared. On the third day of the child's illness the mother noticed that she was breathing heavily, and found it impos-

sible to arouse her from the stupor in which she lay. Being sent for hurriedly, I found the little patient in high fever, with stertorous breathing, and apparently unconscious, but she was able to answer my questions, although she immediately relapsed into stupor. I had her placed in a lukewarm bran bath, and prescribed appropriate remedies. Within thirty-six hours I had the satisfaction of obtaining a renewal of the favorable conditions that had preceded the attack, and in a few days more the girl was convalescent. The first attempt to walk, however, revealed an inability to lift the right foot, which was dragged after its fellow in efforts at progression; the same motor disturbance was discovered to have affected the right arm, after I had been summoned; this had hitherto escaped attention because of the child having always been left-handed. The loss of co-ordination was shown in the child's attempts to pick up small articles from the floor, the hand not only being unable to grasp the object, but being projected forward with some violence, or to either side of its destination; and, finally, when anchored safely at the objective point, after successive trials, the sound member was called to the aid of its palsied fellow to secure the desired article in full possession.

The cause of this palsy was not at all easy for me to ascertain at that time, nor was the solution of the problem decided upon at all satisfactory to myself. That paralysis could follow measles pure and simple I had never been taught to expect, nor had my reading ever furnished me with any example of this sequel of morbilli. I had been unable to discover the slightest trace of diphtheritic trouble in the entire progress of the case, and when informed that the child had had a spasm prior to my reaching the house, at the time of the occurrence of the unfavorable symptoms noted, I was particularly careful to re-examine the throat, fearing lest some implantation of a diphtheritic character had occurred. I discovered nothing more than the usual congested condition of the fauces that is always found in this disease. But paralysis after measles *without diphtheria* as a causal factor seemed hardly admissible, and my conclusion, therefore, was that a *concealed* post-nasal diphtheria was responsible for the disturbance, and I so stated to the family.

That there was ample excuse for not having a too familiar acquaintance with this sequel of measles is readily shown if we consult the pages of Pepper's *System* in reference to the "complications" and "sequelæ" of morbilli, which, according to the writer of the article in question, "it is a difficult matter to dissociate." Under "complications" he says: "Among the more common disturbances of the nervous system convulsions play an important rôle. The epileptoid seizures of the prodromal stage generally terminate favorably, but in some cases of a malignant character the onset of the disease may be ushered in with fatal convulsions. Convulsions in the later stages are apt to have a lethal termination (italics mine), as they usually occur in connection with some grave complication, particularly of the thoracic organs." And under the head of "sequelæ" we find this most important subject dismissed in a single phrase: "and, lastly, various derangements of the nervous system." That the writer, in the preparation of the article, had access to a wide range of authorities is shown in a foot-

note to the title of his essay, yet surely, if clinical evidence is to be regarded, "convulsions in the later stages" are by no means significant of "a lethal termination," unless, as Dr. Allyn says in his article, they should be "repeated," and even under these circumstances they but "increase the gravity of the prognosis, both as regards life and as regards the recovery of power in the palsied members." "Convulsions in the later stages" of measles, then, should never fail to attract attention to the possible occurrence of this rare form of cerebral palsy. In my own case it was not discovered until the child renewed its attempts at walking, after convalescence had apparently been established, the coincidence of the child's left-handedness, in this instance, with a right-sided palsy, preventing an earlier discovery of the lesion.

The treatment pursued was the administration of strychnine in ascending doses, beginning with gr. $\frac{1}{8}$ and reaching to as large a dose as gr. $\frac{1}{4}$, three times daily, before recovery was effected, which was complete. There was no aphasia present in this case.

A CASE OF NON-TRAUMATIC HEMORRHAGE INTO THE SPINAL CORD.

By J. JOSEPH KINDRED, M.D.,

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EXCEPT in respect to its very rapid termination, the following case in its clinical course and history presents a rather typical instance of non-traumatic spinal hemorrhage.

The patient, J. G., an intellectual married man, fifty-nine years of age, had been in good health up to the date of the present trouble, excepting for occasional severe attacks of intercostal neuralgia.

He was well-built, rather muscular, always temperate and active in his habits. There was positively no history of syphilis or of any long illness. A few hours previously to the first symptoms of the spinal hemorrhage, he had attended to business with his usual enthusiasm, and expressed himself as feeling unusually well. At the moment of the appearance of the sudden pain and other symptoms he was making some mental effort, not amounting, however, to any unusual strain. Without any prodromal sign he fell forward on the floor, at first seeming very slightly stunned as if from shock, but not losing consciousness, even momentarily. Placing his right hand to the cardiac region he complained of having there excruciating pain, which from his description resembled that of angina pectoris. There were also pain in the dorsal region, spinal tenderness, and the "cincture feeling" over the chest and abdomen. After walking with assistance into an adjoining room, a feeling of beginning numbness in the lower extremities was complained of. Thorough examination showed much anesthesia below the fifth dorsal vertebra, with beginning paralysis of the muscles connected with the segment of the cord to which the pain had been referred. The reflex excitability was diminished. Three hours after the initial symptom, respiration was much disturbed; the pain, almost agonizing at first, had greatly subsided, while the power of motion in both legs was

completely lost. The implication of the spinal centers controlling the bladder and bowels was indicated by the patient's inability to expel either urine or feces. That the hemorrhage had occurred high up in the dorsal region was suggested by persistent priapism and by intestinal flatus, showing paralysis of the splanchnics. The temperature was normal; the pulse 98. The abdominal and other muscles concerned in respiration rapidly became paralyzed; the respiration grew more and more labored until death ensued—six and one-half hours from the beginning of the attack. The usual course of treatment had been pursued. One point of special interest was the very rapid termination of the case. In his work on *Nervous Diseases*, Dr. Allan McLane Hamilton states that he has never seen a fatal termination in such cases within several days, and doubts if such could be the case, unless the hemorrhage should occur at a very high point, involving a number of the intercostal nerve-roots; he further says that even this is improbable. Dr. Hammond, however, takes the opposite position, and this case, as the autopsy shows, certainly seems to sustain the latter view.

The diagnosis here was made quite clear by the rapidity of the onset; the intense, localized pain slowly subsiding; the absence of marked pain in the limbs; the absence of fever at the onset; the absence of cerebral disturbance; by the early occurrence of anesthesia extending around the body and terminating about on a level with the fifth dorsal vertebra, in a very narrow line, above which there was no disorder of either motion or sensation.

Thus, it will be noticed, there were present many of the signs diagnostic of spinal hemorrhage, as well as others common both to it and to hematorrhachis, myelitis, and other diseases of the cord.

The differentiation was made from spinal tumor, aneurism, bone-disease, and inflammatory conditions of the cord resulting in paraplegia, by the suddenness with which the decided symptoms came on, while the condition differed from cerebral hemorrhage in the patient's undisturbed consciousness and speech. Embolus was also thought of as capable of producing some of the sudden symptoms, but this was excluded on the ground that it would hardly cause such complete paralysis.

Spinal meningeal hemorrhage remained to be excluded, and this was done because the sphincters of the bladder and rectum were so early affected; the pain was not marked in the limbs, and death very quickly ensued.

At the autopsy, careful examination of the cord showed an appearance of bulging just above the level of the fourth dorsal vertebra. Dissection at this point revealed a darkish-red clot, about the size of an almond, lying almost wholly in the gray matter. The parts of the cord immediately adjacent were somewhat softened, and were found by microscopic examination to be somewhat congested. Beyond this nothing abnormal was found.

As to the cause of the hemorrhage in this case, it is not easy to say, as the patient's history was negative concerning those conditions that are known to predispose to spinal hemorrhage, such as blows or traumatic injuries of the back, excessive fatigue, undue venereal indulgence, disease of the vertebra, and, rarely, the toxic influence of strychnine and the secondary effects of tetanus.

A remarkable case due to sudden congestion at the

menstrual period is reported by Goldammer in *Virchow's Archiv* for January, 1876.

The termination of this and of almost every other case of hemorrhage into the substance of the cord seems to expose to some doubt the correctness of the diagnosis in many of the cases reported as having recovered.

Many cases in which marked improvement takes place in a month or two, are doubtless cases of meningeal hemorrhage and not hemorrhage into the substance of the cord.

There are, however, well-authenticated cases of complete recovery following hemorrhage into the substance of the cord, among the most interesting of which is one caused by a blow upon the back, reported in 1867 in a monograph on the subject by Dr. John Ashhurst, and another observed by Cruveilhier.

PAGENSTECHER'S OPERATION FOR ENTROPION AND DISTICHIASIS, ILLUSTRATED BY TWO CASES.

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IN Von Graefe's *Archiv für Ophthalmologie*, vol. xxxvi, pt. iv, is a description of Pagenstecher's modification of Hotz's operation for the cure of entropion and distichiasis, with the report of seventy successful cases and no relapse after five or six years. The writer, Dr. Otto Scheffels, expressed himself unqualifiedly in praise of the procedure and cordially recommended it. It is well known that many operations for the relief of this distressing affection have been devised, and none has proved more than moderately successful. The inverted and distorted eyelashes are found almost exclusively in old cases of granular lids. Granular conjunctivitis, or trachoma, should be regarded as a malignant disease, and frequently fatal to sight from loss of transparency and uncorrectable alteration in curvature of the cornea. These defects are caused in the first instance by the friction of the roughened lid, and later of the deformed cilia, distorted from their proper direction, over the smooth epithelial surface. The conjunctiva is shrunk and atrophied. The tarsal cartilage is thus more or less abnormally curved, and partial ptosis usually follows.

Pagenstecher's operation consists of the following steps: An indentation is made in the skin in the middle of the lid, one-half mm. below the tarsal border, in order to mark the exact site of the subsequent cut. The lid-forceps is next adjusted, the greatest care being exercised that the conjunctiva and blade are smoothly and exactly in contact. An incision is now made, commencing at the indentation and carried down to the cartilage, extending transversely to the right and left in its entire width. The upper half of the cartilage is exposed by freeing it from overlying muscle and fascia, carefully pushing those fibers above the cut upward and backward, and those below downward. The placing of the sutures is the final step. This should be carried out with the greatest nicety, since the success of the operation depends upon restoring the tendon of the levator palpebræ to its former position and attachment, from which it had become dislodged by the paralyzed fibers of the

orbicularis. A curved needle, armed with moderately thick silk thread, is entered first in the center of the pad of muscle and skin, 2 mm. above the ciliary border, passed through the pad out into the cut, through the upper border of the tarsus and through the tendon of the levator, which has been grasped by a forcible thrust of the forceps held in the operator's left hand, and brought forward. Two other sutures are inserted in a similar manner, one on either side of and equidistant from the first. All are firmly tied. The divided integument is left open and allowed to heal by granulation. In four or five days the threads are removed.

CASE I.—F. G., thirty-one years of age, was the subject of granular lids for many years. Both upper lids had been unsuccessfully operated on in two clinics in Germany, for entropion and distichiasis. At the time of her first visit, $V = R. \frac{20}{CC}$, $L. \frac{5}{CC}$; the conjunctivæ were

shrunk, the corneæ opaque. The left eye I considered nearly hopeless from dense opacity and commencing staphyloma. The right eye was the seat of severe pain from the constant irritation from the inverted lashes. The patient was obliged to remain in her room three days in every week, on account of pain and photophobia. A few weeks' treatment by depilation, atropine, etc., was of no permanent benefit. In December, 1890, the operation as described, was performed, the patient making a good recovery in a few days. Relief followed at once, and upon the occasion of her last visit, V in $R.$ had improved to $\frac{20}{CC}$, and in $L.$, in which an iridectomy was done, to $\frac{XL}{CC}$. The eyelashes have attained their normal length, curve, and direction, and not one has since been extracted.

CASE II.—M. S., seventy years old, had granular lids of thirty years' duration, causing severe entropion, unrelieved by previous operations. The $R.$ cornea was opaque and perforated by extensive ulceration. The $L.$ was densely opaque and vascular. $V = R., 0$; $L.$, light-perception. Pagenstecher's operation was performed on the $L.$ in April, 1891. The patient was seen frequently during the summer, and there was no return of the entropion. V commenced to improve soon after the operation, continuing up to the time of her last visit, when it equalled $\frac{20}{CC}$, surely a remarkable result when it is considered that this eye had been of no service to her for many years.

I am aware that two cases are not sufficient to establish the invariable utility of any new surgical procedure, and that the lapse of time after the operations until this report would be held by many as insufficiently long to permit of a conclusive test. These cases must be regarded as simply confirmatory of Pagenstecher's good results, and not introductory of a new operation. It should be remembered, however, that they were extreme cases. Each had been the subject of previous operations that not only had not cured the disease but rendered later operations more difficult of performance and with less prospects of success. The results obtained were eminently satisfactory, and convincing to me, at least, that the procedure is founded upon proper principles and will obtain the first place among the methods devised for the relief of entropion and distichiasis.

SCARLATINA SINE EXANTHEMATE.

By W. R. LEE, M.D.,
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MEIGS and Pepper, in their work on *Diseases of Children* (seventh edition, 1883, p. 805), say: "It is impossible to distinguish scarlatina from the other eruptive fevers by the symptoms which precede the eruption. The only signs upon which a diagnosis at that time might be grounded are great frequency of pulse, which is characteristic of this disease, some soreness or redness of the fauces, and the prevalence of the disease in the community. But these are all exceedingly fallacious, and the physician should be content to wait for the eruption before he ventures to speak with certainty. After the eruption has come out, it can scarcely be mistaken for anything else, except it be roseola."

I shall not take issue with the statement quoted, but when one encounters a disease that presents all of the symptoms of scarlatina, *except the characteristic rash*, the situation becomes an embarrassing one. Surely, no one would hesitate to make a diagnosis of typhoid fever in a case in which all of the symptoms were present excepting the eruption. I append herewith a series of observations that cannot be without interest.

On December 1st I was called to see a girl seven years old, whom I found in light, restless sleep, with twitching of the muscles of the extremities. The pulse was 140 and became accelerated as she awoke. The temperature was 101.8° F. The tongue was covered with a thin, moist, white coating, except for a quarter of an inch at the edges, which were red and slightly swollen; scattered over the white surface, within a quarter of an inch of one another, were small, red, swollen points that gave the tongue a characteristic "strawberry" appearance. The throat, including the tonsils, arches, uvula, and, to some extent, the posterior wall of the pharynx, was swollen. Pain in the throat was only complained of in swallowing solid food. There was slight tenderness of the submaxillary glands. The appetite was impaired, but there was annoying thirst.

The history given by the mother was that the child was well until called from her play to supper, when she ate a light meal, and became apparently very ill at eight o'clock, an hour after which I saw her. Suspecting scarlatina, I gave precautionary instructions awaiting the development of the rash. A few points of redness appeared about the neck on the morning of the second day, but not enough to be characteristic.

On December 12th I saw Mrs. F., who presented phenomena similar to those observed in the preceding case, except that there was no glandular enlargement.

Between December 12th and January 15th I saw sixteen cases (five in adults and eleven in children) presenting similar symptoms, varying only in minor points.

In five of the cases, the glands were neither swollen nor tender. Three complained of soreness of the throat. In two children, vomiting was added to the nervous symptoms. In two of the adults, nervous phenomena were absent.

In all of the children, the pulse frequently ranged between 140 and 148; in one of the adults, it reached 140; in the others, it was between 130 and 134. In all of the cases the temperature was between 101.8° and 102.4° F.

In none of the cases, excepting the first two, was there anything that even resembled the rash of scarlatina.

I was forced to make a diagnosis of mild scarlatina "by exclusion," the verification of which has in some measure been made by the sequelæ.

In one child diarrhea appeared early in the second week. From the knowledge of most careful nursing in the case, I feel confident in considering the diarrhea as a sequel of the previous disease.

In two cases troublesome bronchitis appeared after the more active febrile symptoms of invasion had disappeared.

In two cases, after careless exposure, the swelling of the submaxillary glands returned, with slight elevation of temperature and acceleration of pulse.

In two cases desquamation took place, not extensively, but indubitably.

One of the adults, Mrs. C., on December 20th gave birth to a girl baby; the labor lasted seven hours, and for four days convalescence progressed without a complication. On the morning of the fifth day I found the woman presenting the train of symptoms and signs described, and, in addition, sore-throat, repeated swelling of the submaxillary glands, edema of the feet and legs, and ultimately a clearly defined attack of puerperal fever with localized peritonitis.

My medical colleagues do not concur in my diagnosis, in support of the correctness of which I present the following reasons:

The epidemic character of the disease: eighteen cases occurred in my own practice and there were four others of which I have information, in a community numbering not over five hundred souls in all.

Its contagious character: the disease ran through three families, and in four of the cases, in as many different families, it was possible to trace contact with the families in which the disease was prevalent.

The unusual similarity of the symptoms in all of the cases, presenting so many of the lesions of scarlatina, notwithstanding the absence of the rash.

The corroborative evidence found in the sequelæ.

MEDICAL PROGRESS.

Secondary Miliary Tuberculous Arthritis. — NICAISE (*Revue de Chirurgie*, 1891, No. 12, p. 1115) has recorded the case of a man fifty-six years old, whose health had been failing for about a year. Pains in the lower extremities had compelled him to take to his bed. Shortly after, the pain localized itself at the right knee, which soon became tumid; fluid collected in the joint. Movement at the knee developed crepitus. The thigh was atrophied. The second phalanx of the right ring-finger presented evidences of a past osteitis. Nothing abnormal was detected in the lungs; there was neither cough nor expectoration. Fungous arthritis being diagnosed, the extremity was immobilized in a fenestrated silicate dressing, and vesicants and pressure applied to the joint, in conjunction with the administration of cod-liver oil and tonics. The condition of the knee improved, but the general condition of the patient, however, failed to participate in the improvement. On the contrary, the man lost appetite, and diminished in weight;

abdominal pains developed, without diarrhea; irregular cough set in, without expectoration; some moist râles could be heard in the left lung. Cerebral symptoms and elevation of temperature appeared. Progressive aggravation of the symptoms was followed by death. At the autopsy, only the lungs and the knee were examined. Both lungs contained many confluent miliary tuberculous granulations, especially at the apices, with no tendency to softening or cavitation or suppuration. The tissues of the knee-joint were thickened. The cavity of the joint contained an excess of fluid. The synovial membrane was the seat of numerous miliary granulations. The cartilages were softened and undergoing destruction. In the anterior wall of the articulation was a small caseous mass. In the tibia, at a point corresponding with the situation of this mass, were the evidences of a fungous osteitis. Miliary granulations were also found in the medulla of the femur. It is thought that the primary lesion was a simple fungous arthritis, to which subsequently a general tuberculosis was superadded.

Rupture of an Aortic Valve from Physical Exertion.—TRETZEL (*Berliner klin. Wochenschrift*, 1891, No. 44, p. 1073) has recorded the case of a large, muscular, hearty man, forty-one years old, who, while pushing a heavy cart, felt a severe pain in the chest. In the course of the day both the man and his wife observed a purring sound that emanated from the man's chest, and that occurred with the regularity of the pulse. Except for oppression of the chest and disturbance of sleep, the general condition was unaffected. On examination, a murmur could be heard at a distance of two or three yards from the patient, and it was observed that the sound was produced subsequently to the occurrence of the apex-beat. On palpation of the precordium, a tremor could be felt. Pulsation was detected in the epigastric region, in the carotids, and in the peripheral vessels. The area of cardiac percussion-dulness was already increased. On auscultation, a loud diastolic murmur was heard at and to the right of mid-sternum. A diagnosis of aortic insufficiency, from rupture of a valve leaflet, was made. The patient was lost sight of for two years, when he was found cyanotic and anasarous. The heart had become enormously enlarged. Its action was frequent and feeble. The diastolic murmur was not as loud as it had been at first, and could no longer be heard at a distance from the chest. While under observation, the patient died suddenly. At the autopsy the heart was found to be immensely dilated and hypertrophied. The first part of the aorta was dilated. The aortic orifice was incompetent. The right leaflet at its anterior portion was torn from its attachment, and floated free in the opening. A linear cicatrix occupied the site of attachment of the valve. The remaining valves and orifices were normal.

The Toxicity of the Urine in Diseases of the Liver.—From a study of one hundred cases, SURMONT (*La Semaine Médicale*, 1892, No. 4, p. 25) has found that the toxicity of the urine undergoes changes in connection with diseases of the liver. It is augmented in atrophic alcoholic cirrhosis, in tuberculosis of the liver, in extensive and nodular carcinoma, in some forms of obstinate icterus, and sometimes in hypertrophic biliary cirrhosis. It re-

mains normal or is diminished in hypertrophic alcoholic cirrhosis, in obstructive disease of the heart, and in certain periods in hypertrophic biliary cirrhosis. In infectious jaundice, catarrhal or grave, the toxicity of the urine remains normal or is diminished at the height of the attack, but increases with its decline. The toxicity of the urine remains normal or is augmented as the hepatic cells are normal or altered, either in structure or in function. When the toxicity of the urine is augmented a milk diet and intestinal antiseptics are rigorously indicated.

Carcinoma of the Stomach.—As a result of a study made at the clinic of Lépine, at Lyons, MOUISSET (*Revue de Médecine*, 1891, No. 10) has found that the blood of patients with carcinoma of the stomach suffers as decided a diminution in the proportion of hemoglobin as in the case of chlorosis. This knowledge constitutes a valuable point in differential diagnosis, especially between carcinoma of the stomach and pernicious anemia. In the former, the proportion of hemoglobin is decidedly diminished; in the latter, the proportion is normal or increased.

Of twelve hundred deaths from all causes, sixty-one were found to be due to carcinoma of the stomach, and in twelve of these pulmonary tuberculosis was found associated.

Lysol in the Treatment of Aural Affections.—HAUG (*Journal de Médecine de Paris*, iv, 2, 1892, p. 13) recommends irrigation with a centesimal solution of lysol in the treatment of otorrhea. In case of coëxisting inflammation of the meatus and tympanic membrane, the irrigation is preceded by instillation of few drops of a solution of forty-eight grains of cocaine hydrochlorate in a half-ounce each of distilled water and alcohol. In case of otomycosis several drops of a solution of twenty grains of lysol to an ounce of alcohol are introduced into the auditory meatus twice daily, and permitted to remain for ten minutes. As a dressing, gauze impregnated with a solution of from ten to twenty grains of lysol in half an ounce of distilled water and two drams each of glycerin and alcohol may be employed.

Cranial Auscultation.—RICHARDSON (*Asclepiad*, 1891, viii, 32) records several cases of vertigo and noises in the ear or cranium, alone or associated, in which, upon the application of the stethoscope to various parts of the head, murmurs could be heard, in some instances dependent upon valvular lesions of the heart, in others probably upon aneurism, and in still others probably upon roughening of the intima of the arteries. Local treatment is likely to do harm. The constitutional treatment will depend upon the underlying condition. The best sedative is a combination of dilute hydrobromic acid, from fifteen to twenty minims; infusion of digitalis, half a fluidounce; and distilled water, sufficient to make an ounce and a half as a dose.

A Case of Anthrax Cured by Excision and the Employment of Ipecacuanha.—DAVIES-COLLEY (*Lancet*, No. 3555, p. 872) has reported the case of a horse-slaughterer, in which, after a scratch upon the left side of the face, swelling and induration developed, involving the eye-

lids and the cheek, and extending to the subclavicular region. A slough formed, in the serum of which anthrax-bacilli were found. A disc of skin was excised from the focus of infection, and the wound was covered with powdered ipecacuanha. Five grains of ipecacuanha, with one-sixth of a grain of morphine, were administered every four hours. For three days the condition grew worse, but subsequently improvement set in and gradually progressed to recovery.

Movable Kidney and Hydronephrosis.—LUCAS (*British Medical Journal*, No. 1617, p. 1343) maintains that movable kidney is a condition that, during displacement, may, and often does, lead to hydronephrosis and subsequent destruction of the kidney, in consequence of twisting of the pedicle, or pressure of the organ upon the ureter. To avoid this danger, and to relieve the patient of pain, he recommends nephrorrhaphy. Even when hydronephrosis has become pronounced, relief may be afforded by nephrorrhaphy, and further degenerative change prevented. Three cases are reported, in two of which nephrorrhaphy was performed; in one, nephrectomy was performed; in one, operation was declined.

The Pathology of Paralysis Agitans.—BORGERINI (*Rivist. sper. di Freniatria e Med. leg.*, 1891, vol. xvii, fasc. 1, 2) has reported a case of paralysis agitans, in which after death, on careful microscopic examination, an excessive formation of connective tissue was found in various parts of the cerebro-spinal nervous system, with pigmentation and atrophy of gray matter and ganglion cells. The walls of the capillaries were thickened, the lumen of the vessels was increased, and the perivascular lymph-spaces were dilated. In many places miliary aneurisms were present. The lesions are thus those of senile involution.—*La Médecine Moderne*, 1891, No. 43, p. 746.

The Suture of Nerves.—At a meeting of the Berlin Medical Society, GLUCK (*Deutsche med. Wochenschr.*, 1891, No. 46, p. 1273) presented a man twenty-two years of age who, following a punctured wound of the arm, developed complete radial palsy. Enlarging the wound, it was found that the musculo spiral nerve had been divided. The proximal and distal extremities were carefully sutured and the wound was closed. At the expiration of a month, electric treatment was instituted. At the expiration of five months, reactions of degeneration were still present, but power of movement was beginning to return. A favorable prognosis was expressed.

Fatal Hemorrhage from Scarification of the Conjunctiva.—SHIRLEY (*New York Medical Journal*, 1892, lv, 1, p. 15) has recorded the case of a mulatto infant, six weeks old, with hereditary syphilis, in which fatal hemorrhage followed scarification of the palpebral conjunctiva for purulent conjunctivitis. Hot water, ice, and styptics failing to restrain the hemorrhage, sutures were passed beneath the bleeding surfaces and the upper and lower lids were united. The hemorrhage was controlled, but the child died.

Cresol-iodide.—SZOLDRSKI (*Münchener med. Wochenschr.*, 1891, No. 43, p. 753) has employed local appli-

cations of cresol-iodide in various acute and chronic affections of the nares and larynx. While exerting no direct influence upon the pathological process, the agent proved specially useful in checking excessive secretion. It also acted beneficially when applied as a disinfectant after operations in the nares and larynx. Over iodoform cresol-iodide has the advantage of being inodorous.

Purpura of the Mucous Membrane of the Mouth, Pharynx, and Larynx.—AUDUBERT (*Annales de la Polyclinique de Bordeaux*, 1891, No. 5) has recorded the case of a man, fifty years old, with tuberculosis of the larynx and lungs, in the course of which purpuric spots appeared upon the uvula, the tongue, the gums, and in the larynx and pharynx, but nowhere upon the skin or in the nares.—*Wiener klin. Wochenschr.*, 1891, No. 43, p. 813.

The Treatment of Anthrax and Analogous Conditions.—By experiments upon animals and by clinical observations in man, NISSEN (*Deutsche med. Wochenschr.*, 1891, No. 53, p. 1425) has been able to demonstrate that the immediate application of an elastic ligature to the proximal side of a wound infected by anthrax, together with a thorough cauterization of the wound, will prevent the development of anthrax. Either procedure alone will not suffice. Nissen suggests the application of the principle to be deduced to the early treatment of other infections introduced through the medium of the lymphatic system.

Benzosol as a Substitute for Creasote.—To some tuberculous patients the odor and taste of creasote are extremely unpleasant, and in some the administration of the remedy in suitable doses gives rise to impairment of appetite and derangement of digestion. Guaiacol, the active constituent of creasote, is open to similar objections. The most recent substitute proposed consists of a combination of guaiacol and benzoic acid (the proportions are not stated), designated benzosol. HUGHES (*Deutsche med. Wochenschr.*, 1891, No. 53, p. 1435) has employed benzosol in a series of twenty cases of pulmonary tuberculosis, with highly gratifying results. Appetite returned, cough diminished, the subjective condition improved, and there was increase in weight. Benzosol is a white powder that may be administered thrice daily, after meals, in doses of three grains, made into troches, with the addition of a twelfth of a minim or more of oil of peppermint. For a week, three troches may be given daily; then for three weeks, six troches daily; for the next week, three troches daily; in the sixth week the administration is intermitted, to be recommenced in the seventh.

Tuberculosis in the Goat.—It has been maintained that goats possess immunity from tuberculosis. At a meeting of the French Academy of Medicine, COLIN reported the development of tuberculosis in a goat that had been inoculated with tuberculous tissue obtained from a cow. The goat died two months after the inoculation, presenting tuberculous involvement of the lymphatic glands and of the lungs.—*Deutsche med. Wochenschr.*, 1891, No. 53, p. 1436.

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DUTIES OF THE ELDER PRACTITIONER.

WITH his practice established, his position assured, or quite as much so as may be expected, what are the duties of the elder to the younger practitioner? The latter, by the fact of his coming, asserts his right to a place, and, in a certain sense, lays claim to a sharing of the work of the elder. Shall the claim be allowed by cordiality of reception, or be disallowed by secret opposition and neglect? It would seem that the question were needless, in view of the tradition of ethics that has long been the pride of our profession, and the large humanitarianism that, from the earliest times, has characterized the medical guild. Envy is an unworthy motive and especially so with physicians. The object of their life-work does not warrant such selfish indulgence. Whether willingly or unwillingly, whether sooner or later, the younger must take the place of the elder; better the passing of the torch by consent and good-will than by wrestling and ill-will.

Instead of an individualism and struggle for personal place, it harmonizes with ideals of professional success to cultivate a desirable *esprit de corps*, or common unity. The work of the elders should be directed to preventing the entrance into the profession of the unworthy and unfitted, rather than

embittering the lives of those allowed admission. Let the standard of medical education, the preliminary and final examinations, be made more stringent, and the lengths of college courses be increased, etc., so far as wished, but the theoretic right to practise as authorized by the conferred degree should be followed by the practical welcome from those longer in the work.

In the choice among many younger competitors the "practical welcome" should, of course, be conditioned upon character. When self-assertion and the outcropping of low ethical standards, incompetence, etc., are manifest, neglect is certainly justifiable. But when deference, capacity, and personal honor are evident in the younger men, the welcome should be clear and frank. What are a few of the prosaic and practical methods of effecting this welcome?

1. By encouraging the habit of frequent consultations in severe or puzzling cases of illness, and by lessening the obstacles in the way of such consultations. The proposal or possibility of these consultations is often shut out by the knowledge of the high fee of the consultant. Why should the charge be disproportionately higher in consultation cases than in others?

2. By summary and effective measures to stop the deplorable abuse of medical charity by rival hospitals and dispensaries. Efforts to this end apparently meet a horrible dead-wall of indifference on the part of older men. It is, indeed, they that usually keep up and increase the abuse. It is a crying injustice to the younger professional men. It must be stopped, both for the sake of the public and for the sake of the profession, being injurious alike to both. The remedy lies in the hands of the older members of the profession alone.

3. By making the bestowal of hospital and subordinate teaching positions sought by the younger dependent upon character and medical attainment, not upon scheming and "private pulls." Anyone that has once seen the inside wire-pullings, the filthiness of medical politics displayed in a scramble for place, realizes how nearly the methods of the ward politician are adopted in the allotment of these official positions. It is quite certain that often the worst men succeed, not the best. The most brazen impudence and flashy capacities make the most noise; the modest and self-respecting shrink from the self-advertisement and the importunities of friends that the schemer delights in, and the

schemer is preferred. Boards of trustees of colleges or hospitals should be guided by the wisdom of elder physicians and should reject the wire-puller, if for no other reason than that he is a politician. Character and honest competitive examination should go for more than "influence." Capacity is not usually associated with conceit, and when the man seeks the office with egotistic pertinacity it is, *per se*, pretty sure proof that he is unworthy. Let the office seek the man!

4. By the formation of local medical societies and guiding them toward scientific usefulness, and by upholding ethical standards and practices. Of prime importance and great service would be the society medical library, where great works of reference, a wide variety of medical journals, etc., could supplement the private library. How rare is this in any but the largest cities, and yet it is precisely the country and village practitioner that most needs such helps. The difficulty experienced in getting together men so busy and so scattered should be overcome by unwearying endeavor, supported by the knowledge that association, essay-reading, reports of cases, etc., the friction of mind upon mind, leads to professional results doubly repaying the trouble. Such active, local, suburban societies would help further the very desirable but sadly-neglected practice of lecture-giving by invited visiting physicians and specialists. Why not apply "university extension" to medicine, and make an organized system of addresses a part of the year's work of county medical societies? But perhaps the greatest good of such societies is to prevent the ethical degradation that has to be guarded against with jealous care. It is the elder men that having learned by tradition and experience the fatuity and falsity of the maxim, *Medicine is a business*, should pass the tradition on and down to the younger, who are often sadly prone to accept the new creed. An illustration has lately occurred in a small neighboring city. A quack, whose patient's ingravescence was landing him in an unenviable position, wished the moral support of a consultation, and secured the help of a young physician solicitous of practice and indifferent to the code. The discipline of the harmonious medical society, rallied by the old president, taught the boy a needed and lasting lesson.

5. Against the itch of advertising in the lay press the older men should exercise the most stringent guard. Firstly, as to themselves, or else they can-

not blame the younger. They well know the means whereby the "great cure" and the "great operation" get into the papers. It is rarely without authorization, as it is the experience of those who do not wish to be quoted that reporters do not go against the expressed will of a physician. Sometimes the elder lets the unauthorized puff go, from indifference or secret love of it; and then the younger, "taking fire" from bad example, steps clean over the traces, gives the ubiquitous reporter *carte blanche*, and the elder cannot then control the younger. His hands are palsied by his secret sin.

6. It is the same story with the wretched habit of signing commendatory notices of certain drug, food, or proprietary preparations. When the dishonest younger man goes into service, receives actual pay for his labor in behalf of some pharmaceutical firm, he has the cutting excuse that every nostrum advertisement he receives contains the praises of a thousand old physicians, perhaps wheedled out of them by the shrewd agent, but possibly given only for value received. Let there be no copartnerships, secret or open, of medical men with manufacturing tradesmen!

In these and many other ways the older men can advance the interests of medical science, fraternize and unify the members into a compact body more powerful for self-help and for public beneficence. It is too prevalent a habit for the elders to retire, either in weariness or in indifference, from the actual work just indicated, with the thought: "I am secure, let the youngsters work it out as they please." But they know in their hearts that it is not right—that it is shirking the most obvious of obligations.

THE CURABILITY OF TUBERCULOSIS.

THE day has passed when the thinking and observant longer have any doubt as to the curability of tuberculosis. It seems almost superfluous to dwell upon the proposition, but it may serve a useful purpose to call the attention of the busy medical practitioner and of the community to its truth and importance. Many a battle has been gained that otherwise might have been lost, when discipline has supplanted demoralization. If the patient can be made to believe that the disease with which he suffers is curable, the therapist will find his task the easier; and if the patient can be made to realize that recovery is the more likely the earlier

treatment is begun, the prognosis becomes still more hopeful. In this connection the *Seventh Annual Report of the Adirondack Cottage Sanitarium* is especially valuable. Of seventy-seven patients dismissed, fourteen were apparently cured; in twenty-three the disease was arrested; and twenty-two cases were improved. Can more convincing argument be presented?

It would be tiresome here to detail the treatment of tuberculosis. Each case is a law unto itself. With a proper regard for the etiologic part played by microorganisms in the drama of disease, let us not mistake the cause for the effect—the organism is not the disease. Living as we do in the midst of myriads of disease-producing agencies, existence would be but a series of infections were it not for some kind barrier placed between us and disease. Something more than seed is necessary for vegetable development: not less important is soil. So in the treatment as in the prophylaxis of tuberculosis, it is the constitution and not the germ that requires attention. The principles that should govern the treatment in any case are dependent upon the maintenance of functional activity. The quality of the blood should be improved by good, nutritious food discriminatively administered, by the removal of excrementitious products by the emunctories—skin, kidneys, lungs, bowels—and a proper equilibrium be established between waste and repair. When indicated, the surgical axiom of removal of an accessible source of irritation, when removal is not attended with greater dangers than non-interference, will find application.

MEDICAL DOGMAS.

It is too much to expect that superstition will ever be eradicated from our common life. We scoff at the delusions of our ancestors; failing to see our own illogicalities. Medicine is not entirely exempt from the common failing. It was a long time before we were willing to believe that the arteries did not contain air. Two centuries elapsed before the germ-theory of disease was accepted. It took many years to overcome the belief that malignant neoplasms depended upon the circulation of humors or noxæ in the blood. There are not a few that today maintain that valvular disease of the heart (especially mitral incompetency) and pulmonary tuberculosis do not coexist; that carcinoma and pulmonary tuberculosis do not occur in the same person. There are many sources of error in such

theories. The possibility of error is reduced to a minimum by objective study, by observation. Who that has looked has not seen associated the conditions that it has long been taught are not associated. There are few things of which one can say that they cannot be.

In a study of twelve hundred autopsies at the clinic of Lépine, at Lyon, MOUISSET (*Revue de Médecine*, 1891, No. 10) found that there were sixty-one cases of carcinoma of the stomach, in twelve of which pulmonary tuberculosis coexisted. Such evidence constitutes a rebuke to dogmatism and prejudice. It could not be shaken by libraries of negative testimony. Can any argument be more conclusive?

THE NECESSITY OF STATE MEDICAL EXAMINATIONS.

THE salutary effects of State medical examinations are forcibly illustrated in the report of the Medical Examining Board of the State of Washington. Of thirty applications for authority to engage in the practice of medicine, fifteen were rejected. The questions asked were of such a nature that only the incompetent could fail of the requisite average. The report is but a repetition of like reports that have emanated from other States. As a result of restrictive medical legislation, not only is the number of successful applicants reduced, but the actual number of original applicants is also diminished. It is the imperative duty of the State to afford the community adequate protection from the devices and intrigues of quacks and adventurers, with whom reputable men and women cannot compete.

REVIEWS.

REPORT ON CHOLERA IN EUROPE AND INDIA. By EDWARD O. SHAKESPEARE, A.M., M.D., Ph.D., of Philadelphia, United States Commissioner. 4to. pp. xxv, 925. Washington: Government Printing Office, 1890.

THIS bulky volume, representing an enormous amount of labor and much patient research, gives the results of the investigations undertaken by Dr. Shakespeare in pursuance of the executive order of the President of the United States, which directed him "to proceed under the direction of the Secretary of State to Spain and such other countries of Europe where the cholera exists, and make investigation of the cause, progress, and proper prevention and cure of the said disease." Upon Dr. Shakespeare's arrival in Europe, early in 1885, pursuant to this commission, he found that the cholera was rapidly vanishing from that continent, and learned that

the field for most active observation was to be found in Palermo, the principal city of the island of Sicily. After equipping himself with a travelling laboratory, purchased in Berlin, and familiarizing himself in that city with the characteristics of the comma bacillus of Koch, he went to Palermo and began his work. After the epidemic was ended at Palermo he turned to Spain, gaining information relating to the ravages of the epidemic in Italy, traversed *en route*. He arrived in Barcelona early in January, 1886, and found that the cholera had virtually disappeared from the kingdom of Spain; but because of the great extent and severity of the Spanish epidemic of 1885, as well as on account of the very large number of so-called anti-choleraic inoculations which had been practised by Dr. Jaime Ferrán and his assistants, he was of the opinion that the course of the cholera in Spain presented the best opportunity of making as thorough a study of the disease as was in his power. He visited many towns in nearly every province of Spain where cholera had spread widely, endeavoring to obtain by personal contact with the inhabitants, of high and low station and intelligence, a fundamental knowledge of the circumstances of life, manners and customs, and hygienic conditions, general and individual, which might bear upon the manner of introduction and spread of cholera among them. Especial attention was given to the matter of water-supply and the disposition of household offal. In the round of this personal observation he encountered and spent some time in the midst of a quite severe epidemic, during the month of February, in the ancient walled town of Tarifa, on the northern shore of the Strait of Gibraltar. In addition, he obtained from official sources a careful analysis of numerous and important data concerning the epidemic and the hygienic conditions in upwards of five hundred cholera-stricken towns. Before receiving this, he had undertaken a similar investigation, the results of which were added to and analyzed with the above-mentioned official documents of the Spanish Government. He has also obtained and placed in his report official statistics and documents relating to the anti-choleraic inoculations in Spain. After leaving Spain in April, 1886, authority was requested and obtained to proceed to India, for the purpose of prosecuting researches in the native home of cholera. Serious illness, due to the prostrating influences of the summer climate, prevented him from entirely carrying out his purpose, but he was able to take some observations in the city and suburbs of Calcutta. The report contains 105 illustrations, most of which were made by the author himself; among them 40 photo-micrographs, all but 6 of them being made by Dr. Shakespeare, who was obliged to acquire the art of photography, because he could get no one to do this troublesome work. Numerous analytical charts and tables relating to cholera statistics have been incorporated. There is a full table of contents and a cross index, which will considerably facilitate reference. The work of foreign investigation, continuing one year, and the labor of supervision of the printing of the report, lasting four years, have all been entirely without pay for personal services, and the profession and the country certainly owe Dr. Shakespeare a debt of gratitude for his arduous, patient and successful labors. The report is exhaustive: the course of the last wide-

spread epidemic of cholera is traced in detail, and, in addition, we have comparative statistics of previous epidemics in a number of the localities studied.

The last epidemic of cholera in Europe cost France 15,000 inhabitants; Spain, 180,000 inhabitants; Austria-Hungary, 4000 inhabitants; Italy, about 50,000 inhabitants; Malta, 500 inhabitants—the sum total of mortality being approximately 250,000 human beings. Estimated from a merely material point of view, this shows a sum-total of about 400,000,000 francs of value destroyed; and still greater losses resulting from the damage caused by the disease through idleness, interference with commerce and navigation, interruption of business, and the like, would increase the sum-total of the loss occasioned by the cholera to about a billion of francs in three or four years.

The hygienic surroundings, sanitary conditions, and other circumstances bearing upon the rooting of cholera in various places, whither its seeds are carried, have been carefully studied, and especial attention paid to elucidating the method of its transmission from place to place.

This subject occupies 370 pages. Some seventy-odd pages are next devoted to the "Topography and Demography of British East India in Relation to Cholera."

Bacteriologic investigations and literature occupy more than two hundred of the closely printed quarto pages. A chapter is given to the etiology of cholera and its differential diagnosis from malaria. Immunity and preventive inoculations are each given a chapter. Another chapter deals with measures of prevention, general and individual, and the eighth and last chapter summarizes the etiology and pathology, diagnosis, prognosis, and treatment of the disease.

Dr. Shakespeare's experience, together with his study of the literature of the subject, forces him to admit that the claim made by Koch must be regarded as established, namely, that the presence of Koch's comma bacillus in the alvine evacuations or the intestinal contents or vomit of an individual suffering with a suspicious attack, furnishes a ready, safe, and reliable means of diagnosis of Asiatic cholera. He also confirms in every particular the pathogenic power of the comma bacillus affirmed by Koch. He believes that the exceedingly few adverse reports, when not invalidated by retraction of the authors upon subsequent experimentation, can be explained by the fact that the comma bacillus in artificial culture often rapidly loses its pathogenic power. Dr. Shakespeare is also inclined to admit the claims of Ferrán as to the preventive value of inoculations with a special culture of the comma bacillus, and he believes this to be a complementary proof of the correctness of the claims of Koch, that this comma bacillus is the specific active cause of Asiatic cholera.

Apropos of the Ferrán inoculations, Dr. Shakespeare says that having received unfavorable impressions of Ferrán from what had been published concerning him by the medical and secular press throughout the world, and having been advised by numerous physicians and investigators in London and Berlin, for whose opinions he entertained the highest respect, that a personal investigation of the subject was now beneath the dignity of serious scientific consideration, he was little disposed,

except by a sense of duty, to give himself any trouble in the matter. But besides the impulse of duty, he was stimulated to look into the character and accomplishments of Ferrán and the value of his work by a visitor who called on the morning of his arrival in the city of Valencia. This gentleman was a certain Dr. Jelly, a man apparently of some seventy years of age, who appeared to be strongly convinced of his own consequence. He desired to set Dr. Shakespeare right on the Ferrán question before the latter had wasted any time in personal investigation relating thereto. This gentleman having been the author of a mass of unfavorable correspondence concerning Ferrán in the British medical journals, Dr. Shakespeare was now able to judge for himself of the importance and reliability which should be attributed to those articles, and in the course of the interview soon became convinced by the manner and language of Dr. Jelly, that not only was this gentleman perfectly incompetent to furnish any judicious opinion concerning questions involving an intimate knowledge of modern ideas relating to general pathology or to microscopical investigations, but also that what opinions he might form were likely to be influenced and warped by the most bitter prejudice. The interview convinced him that while he had the opportunity he should personally go to the bottom of the whole Ferrán question, if possible. Quite different was the impression made upon him by Dr. Ferrán. His laboratory was certainly unpretentious, but it had a good modern microscope, and Dr. Ferrán himself was found to be perfectly competent in the question of technique. Honesty and a regard for fair-dealing require the author to say that if anywhere in Europe there are more beautifully stained microscopic preparations than those made by Dr. Ferrán, he has never seen them. Prepared to find the characteristics of a charlatan in the man himself, he found him to be a quiet, reserved, courteous, intelligent, and generally well-informed physician. The impressions formed of his theoretic knowledge of bacteria and of the modern methods of research in the field of natural history compared very favorably with those of most of the leading bacteriologists with whom the author came in contact. He therefore left Tortosa with a very different opinion of the characteristics of Dr. Ferrán from that he had entertained when entering that city.

Dr. Shakespeare cites data from official statistics that have been collected and published since the visit to Spain of the French Commission, which made an adverse report upon Ferrán's procedure. These statistics are signed, in the first place, by the physicians of the locality; in the next place, by the judge of the municipal court; sometimes, also, by the president-judge of the judicial district, by the parochial priest, and by the mayor of the municipality, whose signatures and seals are attested by an authorized notary public. From these statistics it appears that in the Province of Valencia there were, among the villages, inhabited by a population of 50,000, 62 attacks per thousand and 31 deaths per thousand, a mortality of 50 per cent. of those attacked. In twenty-two towns in which inoculation was practised, the inhabitants were divided as follows: 104,561 not inoculated, 30,491 inoculated. Of the latter, there were 387 attacks of cholera, or 12 per cent., and 104 deaths, or 3 per cent., the mortality of those attacked being 27

per cent. Of the former, there were 8406 attacks, or 79 per cent., and 3512 deaths, or 33 per cent., being a mortality of those attacked of 43 per cent. It appears, therefore, that among the population of villages in which anti-choleraic inoculations had been more or less extensively made, the liability of the inoculated to attacks of cholera was 6.06 times less than that of the non-inoculated, whilst the liability of the inoculated to death by cholera was 9.87 times less than that of the non-inoculated. Still another result of the preventive inoculations apparently shown by these statistics, is a marked shortening of the course of the epidemic after a large percentage of the inhabitants had been inoculated. Dr. Shakespeare believes, therefore, that the method of Ferrán, besides giving the subject inoculated considerable immunity from attack and death, furnishes a means of bringing an epidemic rapidly to an end. "The cholera vaccine" is nothing more than a pure culture in bouillon of the comma bacillus.

Dr. Shakespeare is an ardent advocate of efficient quarantine by land and by sea. Admitting the frequent insufficiency of quarantine, he insists that there is a great difference between insufficiency and uselessness. In addition, he advises isolation of the quarantined sick in groups of patients. He considers the present methods of independent quarantine, provided and regulated by seaboard States or cities, as especially defective and insufficient for the exclusion from the United States of the diseases against which quarantine is directed; that "it is impossible adequately to protect the public health of the country against the importation of epidemic diseases by independent local maritime quarantine establishments," and that, therefore, a national system of maritime quarantine is necessary. Concerning general measures of prevention, he advocates speedy isolation of the sick, absolute and rapid destruction of the infectious agents of the disease, not only in the dejecta and vomit, but also in clothing, bedding, and in or upon whatever it lies and finds a resting-place.

Convalescents should remain isolated from the healthy so long as their stools contain any of the infectious agent, say from ten to fourteen days; and before mingling again with the well, they should be thoroughly washed and cleansed in a disinfecting bath, and afterward be clothed from the skin outward with perfectly clean vestments that cannot possibly contain any of the infectious material. Proper precautions should be taken as to the disposal of the dead, and those handling the sick or the dead should be careful to disinfect their hands and clothing at once. Careful directions are given for the management of quarantine stations, and the measures of prevention there to be carried out.

The subject of prophylaxis, individual and general, is elaborately studied. Differential diagnosis is summarily treated. The treatment advocated is that found in the approved text-books, with the addition of "hypodermoclysis" and "enteroclysis;" the former being carried out with a solution composed of pure sodium chloride, eighty grams, sodium carbonate, six grams, in two liters of boiled water, of which from one to two-and-a-half liters are injected each time; the latter with tannin and laudanum. Both of these methods were introduced by Cantani, of Naples, and used with great confidence by him and other Italian physicians. Dr. Shakespeare

is seemingly unaware that Cantani was long antedated by Benjamin Ward Richardson, who saved many patients from choleraic collapse by injections of hot water or hot milk into the peritoneal sac, and in one fatal case produced repeated temporary revival by subcutaneous injection of a warm solution of sodium chloride.

The only and very mild fault-finding we have to make concerning Dr. Shakespeare's report is that it might possibly have been better arranged for consecutive study; but with the vast amount of material that the author had to manipulate, he has certainly done wonderfully well, even in this respect.

A SYSTEM OF PRACTICAL THERAPEUTICS. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Assisted by WALTER CHRYSTIE, M.D., late Physician to St. Clement's Hospital, and Instructor in Physical Diagnosis in the University of Pennsylvania. Vol. I. General Therapeutic Considerations; Prescription-writing; Remedial Measures other than Drugs; Preventive Medicine; Diathetic Diseases and Diseases of Nutrition. With illustrations. 8vo, pp. 1052. Philadelphia: Lea Brothers & Co., 1891.

ANY doubt as to the necessity for a new work on therapeutics will be dissipated by a reference to this system, which will create for itself a permanent position in medical literature. Here are brought together the deliberate opinions and the mature results of the experience of men skilled in their respective departments, while the literature of the world has been liberally drawn upon. The limits of the ordinary review will only permit of passing reference to the different articles, as each in itself is a monograph, while several constitute treatises. Under "General Therapeutic Considerations," Horatio C. Wood outlines with characteristic precision and force the principles of therapeutics, with the indications for their application. In "Prescription-writing and the Combination of Drugs," Joseph P. Remington presents a good deal of useful information that will be gratefully appreciated by the careful and intelligent practitioner. In the section on "Remedial Measures Other than Drugs," A. D. Rockwell considers "Electro-therapeutics" from a practical standpoint, indicating its applications to diseases of the nervous system, to gynecology, and to obstetrics. John K. Mitchell presents as an authoritative statement of the most recent views of Dr. S. Weir Mitchell, and of the latest developments in this method of treatment, an article on "Rest-cure for Neurasthenia and Hysteria." Benjamin Lee contributes a thorough and exhaustive paper on "Swedish Movements and Massage." Edward Mussey Hartwell fully considers the subject of "General Exercise." S. Edwin Solly discusses the various aspects of "Climate"; and Simon Baruch devotes some eighty pages to a masterly consideration of the subjects of "Hydrotherapy" and "Mineral Springs." A gratifying feature of many, if not of most of the articles, is the consideration given to the prophylaxis of disease. There is, besides, a division of the work devoted to "Preventive Medicine," which includes articles on "General Sanitation," by Henry B. Baker; on "Disinfection," by George M. Sternberg; on "Antisepsis and Asepsis,"

by J. William White; and on "Nutrition and Foods, including the Treatment of Obesity and Leanness," by J. Burney Yeo. The subject of "Diathetic Diseases and Diseases of Nutrition" is opened by a scholarly and exhaustive paper of more than two hundred pages on "Tuberculosis," by Solomon Solis-Cohen; in succession follow "Scrofulosis and Rhachitis," by Walter Chrystie; "Acute and Chronic Articular Rheumatism, Rheumatoid Arthritis, and Gout," by James Stewart; "Scurvy," by John B. Hamilton; and "Diabetes Mellitus," by Frederick A. Packard. An index of sixteen pages concludes the volume of 1052 pages.

The work reflects great credit upon contributors, editors, and publishers. It is a monument to, as it is a record of, scientific therapeutics. It should be in the library of every progressive practitioner of medicine.

A TEXT-BOOK OF HUMAN PHYSIOLOGY, INCLUDING HISTOLOGY AND MICROSCOPICAL ANATOMY, WITH SPECIAL REFERENCE TO THE REQUIREMENTS OF PRACTICAL MEDICINE. By L. LANDOIS, M.D., Professor of Physiology and Director of the Physiological Institute, University of Greifswald. Translated from the seventh German edition. With additions by WILLIAM STIRLING, M.D., Sc.D., Blackenbury Professor of Physiology and Histology in Owens College, and Professor in the Victoria University, Manchester. With 845 illustrations, 34 in colors. Fourth edition. Philadelphia: P. Blakiston, Son & Co., 1891.

WHEN the first American edition of this text-book was published, it was predicted that it would have a large sale, not only among students of physiology, on account of its completeness as a work of physiology, but also among practitioners of medicine and surgery, on account of the numerous applications of physiology to pathology and clinical medicine. The instant and continued success that the work achieved is the best possible proof that it possesses merits far beyond the usual text-books. The first German edition appeared in 1880, the seventh in 1890; the first English edition appeared in 1885, the fourth in 1891. The rapid publication of successive editions is an indication of the favor with which it has been received by the profession of both German and English-speaking people.

With each new edition, author and English translator have endeavored to maintain a high standard of usefulness by incorporating all of the recent advances in physiologic science that appear to have permanent value, as well as facts of clinical medicine, pathology, and experimental therapeutics which reveal the connection and interdependence of all vital processes. There is no similar work in the English language that contains such an inexhaustible fund of useful information pertaining to physiology and the allied sciences. The physician and student will here find an answer to almost every question that may arise from day to day in the course of his investigations. Indeed, no working library can be said to be complete without the book.

Physiologic and chemic methods are briefly and clearly described, and the results obtained are presented in a concise and readable form. The illustrations, 845 in number, are striking and apposite, and materially assist in the elucidation of the text.

CORRESPONDENCE.

TREATMENT OF PNEUMONIA.

To the Editor of THE MEDICAL NEWS,

SIR: Many deaths have occurred from pneumonia as a sequel of influenza or *la grippe* in all parts of the civilized world, independently of geographical position or hygienic surroundings, killing alike the prince in his palace and the pauper in his hovel, and apparently in many cases not amenable to recognized rules of treatment. In view of this fact one is inclined to ask whether the opinion of Dr. Coupland, of London, in a paper on "Pneumonia" (*British Medical Journal*), in which, advocating expectancy, he states that "as regards the drug treatment of pneumonia nothing can be done," is, after all, the best advice. In spite of the great weight that must attach to the opinion of so experienced a physician, I would ask if in excluding drugs one can be said to render all the assistance possible to Nature in helping her to work out a cure. For example, when a great portion of the lung is involved, with dyspnea and cyanosis, can nothing be done? Let us consider the causes of these symptoms, which are of such grave import: there is an effusion in the pulmonary tract from the liquefaction of the blood, which causes a nonaeration of the blood; and there is also great extravasation of leucocytes, which characterizes the state of the lung-exudation when resolution has failed to take place. It is under such conditions as these that the preparations of iron are of peculiar benefit. For some unaccountable reason there seems to have been a prejudice in the minds of many practitioners against the use of iron in chest-affections, but I feel satisfied that those that try the iron-treatment in pneumonia will have no cause to regret so doing, and those that have already used it, if their experience has been like mine, will certainly continue its use. For five years I have made a practice of treating cases of pneumonia, when symptoms such as those quoted appeared, with fifteen-minim doses of the liquor ferri perchloridi, and the same amount of liq. ammon. acetatis, given every three hours. Early and brisk counter-irritation is undoubtedly one of the most important points of treatment.

The question that becomes one of practical import now is whether cases of influenza showing a tendency to chest-complications would not be best treated with some preparation of iron from the outset and thus possibly avoid the pathologic degeneration in the lung-tissue that has unfortunately been accompanied with such fatal results. It is at least a matter well worthy of the most careful consideration of the profession. It is to be hoped that some of your readers will contribute their opinions on the subject. Respectfully yours,

A. H. FRASER,

Licentiate Royal College of Physicians, Edin.

HARPER, KANSAS.

IS URIC ACID A PRIME OR SOLE FACTOR IN THE CAUSATION OF RHEUMATISM?

To the Editor of THE MEDICAL NEWS,

SIR: In an article, "The Dietetic Treatment of Some Important Neuroses" (*THE MEDICAL NEWS*, January 2,

1892), Dr. John Ferguson, of Toronto states that uric acid is a prime or the sole factor in producing many neuroses—epilepsy, chorea, hysteria, migraine, etc.—by its action as an irritant poison, circulating through the tissues of the body, when produced in excessive quantity—to cause an "overflow," so to speak, into the circulation.

In my experience with rheumatic affections, I have so frequently noticed this excessive formation of uric acid, as shown by an examination of the urine, that I regard it as symptomatic of a tendency to rheumatic troubles, even before the patient has the attack. Uric acid is produced in the system by a stimulating, nitrogenous diet and the use of alcoholic beverages. In the treatment of rheumatic affections we first prohibit entirely, or allow very sparingly, according to the nature of the case and the condition of our patient, an animal diet and alcoholic beverages, especially wines and beers. Next we give the saline mixtures of potassa and soda and the salicylates. Why? Because clinical experience shows such the best course to pursue.

Does not this treatment lessen the quantity of uric acid, which, by its irritating influence upon the lower-grade tissues of the body, gives rise to the rheumatic attack, consequently checking or "curing" the rheumatism? A case of sciatica, due to rheumatism, remains quiescent so long as the excretion of uric acid is normal in quantity, but as soon as the urine shows an excess, exacerbations manifest themselves, which disappear as by magic when the quantity is lessened to normal by a few doses of salicylate of soda or carbonate of lithium—washing out, as it were, the excess of uric acid from the system.

If such be the case, as clinical experience tends to show that uric acid in excess is a sole or prime factor in the causation of rheumatic affections, have we not the "key" of the trouble, whereby we may prevent a rheumatic attack in the education of our rheumatic patients to abstain from too free indulgence in an animal or nitrogenous diet and the imbibing of alcoholic beverages? Also, in the examination of their urine, as to quantity, appearance, hyperacidity, etc.; in the use of the mineral waters—Vichy, Seltzer, Carlsbad, etc.—as occasion may demand.

If such a course were universally followed, how much of the suffering of humanity might be greatly alleviated or wholly prevented! and a step made in advance in the prevention of disease.

W. E. SHOTWELL, M.D.

DENVER, COLORADO.

THE ALABAMA LAW AS TO MEDICAL EXAMINATIONS.

To the Editor of THE MEDICAL NEWS,

SIR: I notice the following in your issue of January 16th: "The State of Alabama has passed a law requiring all physicians who are not graduates of reputable medical schools to obtain certificates of qualification from a board of medical examiners." Our law has been in operation for ten years and it requires *everyone* wishing to practise in the State to first obtain a license from "the County Board of Medical Examiners." Before being allowed an examination he must first show a diploma from a reputable medical college. We have also a

State Board of Examiners, to which all papers are sent for approval. Any applicant failing to pass a County Board may appear for re-examination to the State Board. No physicians in the State practise without a diploma, except a few who had been in practice for five years before the law was passed.

Very sincerely,
GEORGE S. BROWN, M.D.,
Secretary of Board of Medical Examiners.

BIRMINGHAM, ALA.

OBITUARY.

SIR MORELL MACKENZIE.

In the fifty-fifth year of his age, this famous physician, whose phenomenal career has attracted world-wide attention, has succumbed to bronchitis, a sequel, in all probability, to an attack of the prevalent and pandemic influenza. Graduating in medicine about the time that Czeomak, of Pesth, was travelling through Europe to demonstrate the physiological and diagnostic uses of the laryngoscope, young Mackenzie recognized its usefulness in advance of all but a very few of his medical colleagues, and he cultivated its professional use with such assiduous energy as soon made him its leading exponent. Hence, when a few years ago the Crown Prince of Prussia was known to have a malignant disease of the larynx, the services of Dr. Mackenzie were solicited, and for these he was knighted at the hands of his Queen. This increased his practice and his income.

Dr. Mackenzie's charmingly written journal articles and monographs, usually rich in historic research, attracted many readers, and soon drew to his special hospital crowds of students from different countries, among them hundreds of Americans, Canadians, citizens of the United States, and residents of Central and of South America. In many a town in these United States, and in all likelihood in many other countries, the fact that an aspiring specialist announced himself as a former assistant or as a pupil of Mackenzie, was sufficient to win the confidence of many of his professional brethren. Many of the leading laryngologists of London and Great Britain to-day were at one time his favorite pupils.

Dr. Mackenzie's phenomenal success in securing patients at home and from abroad produced a good deal of jealousy on the part of a number of the more conservative practitioners of his day, and his methods a considerable amount of distrust, from the effects of which his professional reputation suffered more or less during his entire career; but he continued his work in his own manner independently of disregards or of covert and open sneers.

The true inwardness of Mackenzie's course in the case of the late Emperor Frederick, may possibly be disclosed in some posthumous publication; but the fact remains that that very sensible potentate stuck to Mackenzie to the very last moment, notwithstanding the unhappy progress of his case and the consequent scornful actions and comments of the other medical attendants. Hence he must have endured and approved of Mackenzie's conduct, right or wrong.

A career of practice such as spread the name and the

fame of Morell Mackenzie, even to the remoter portions of the globe, had not occurred in the previous history of medicine.

NEWS ITEMS.

The Fifth District Branch of the New York State Medical Association will hold its eighth annual meeting in Brooklyn on Tuesday, May 24, 1892. All Fellows desiring to read papers will please notify the Secretary, E. H. Squibb, M.D., P. O. Box 94, Brooklyn.

University of Pennsylvania.—The Alumni of all departments of the University of Pennsylvania will give a dinner on the evening of Saturday, February 27, 1892, at Musical Fund Hall, with the object of bringing together a large number of the graduates of the University in social intercourse in a dignified and agreeable manner. It is also designed by this reunion to inaugurate a series of triennial dinners, which will serve to mark various epochs in the life of the University.

DR. ZEOVIA OWEN-MCDADE died recently, of acute pneumonia, in Kenyon, Minn., after an illness of three days. Dr. Owen received her degree at Michigan University in 1888. After nearly a year of study in Europe she returned to this country and married a classmate, Dr. C. W. McDade, engaging in practice in Nebraska, but removing to Minnesota last summer.

BOUCHUT, the distinguished French clinician, is dead.

BOOKS AND PAMPHLETS RECEIVED.

Statistics of Railways in the United States. Third Annual Report, for the Year Ending June 30, 1890. Washington: Government Printing Office, 1891.

Seventh Annual Report of the New York Post-Graduate Hospital for the Year Ending September 15, 1891. New York, 1891.

Notes on Cephalo-metrical Measurements. By Charles H. Merz, A.M., M.D. Reprint, 1891.

Four Congenital Tumors of the Head and Spine, All Submitted to Operation. By W. W. Keen, M.D. Reprint, 1891.

Jacksonian Epilepsy; Trephining; Removal of Small Tumor and Excision of Cortex. By Charles K. Mills, M.D., and W. W. Keen, M.D. Reprint, 1891.

The Practical Details in the Treatment of Croupous Pneumonia. By Thomas J. Mays, M.D. Reprint, 1892.

Cantonale Correspondenzen. Reprint, 1891.

Nouvelles Observations concernant l'action thérapeutique de l'Ichthyol, suivi d'une note additionnelle. Taminès: Duculot-Roulin, Imprimeur-éditeur, 1891.

Beitrag zur Freund'schen Ichthyolbehandlung der Frauenkrankheiten. Von Dr. Edgar Kurz, Director der chirurg. Poliklinik in Florenz. Leipzig: Verlag von Georg Thieme, 1891.

Die Behandlung des Erysipels. Von Dr. Stanislaus Klein. Reprint, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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